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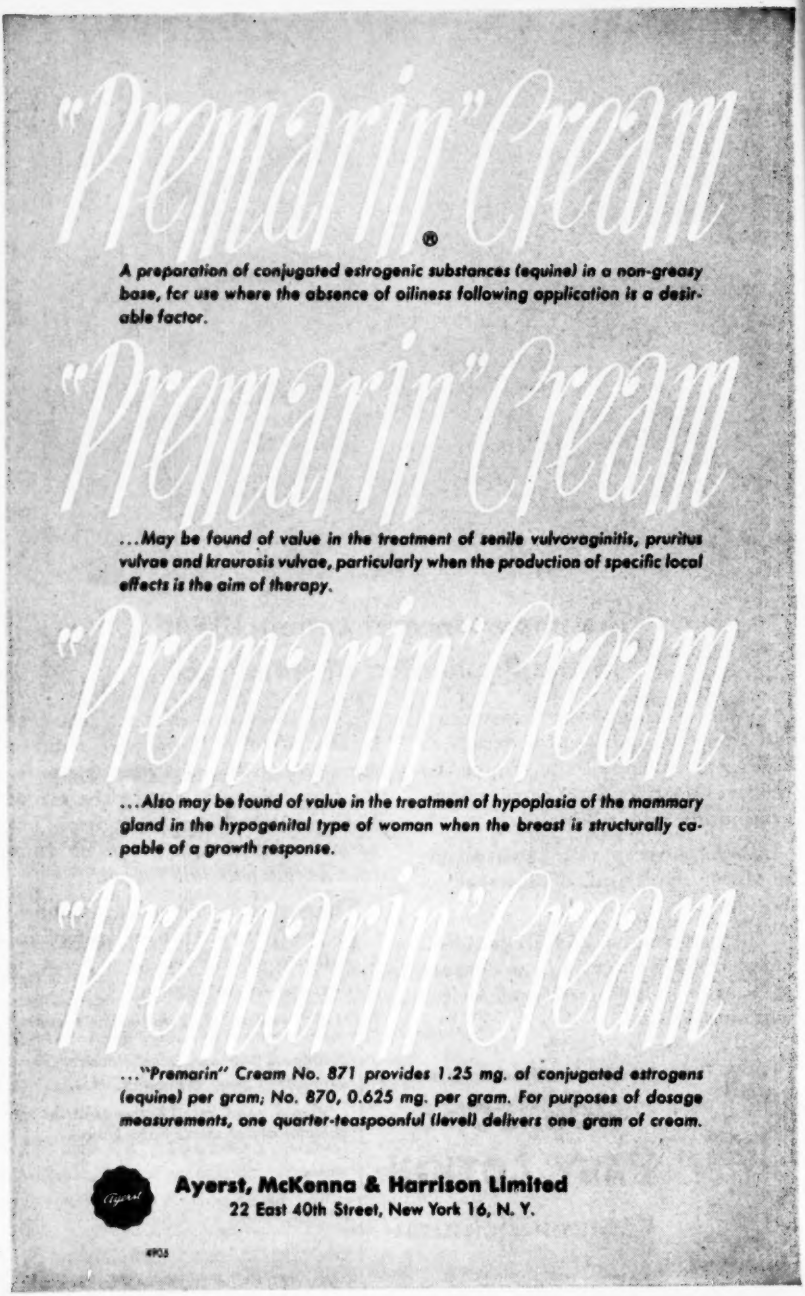
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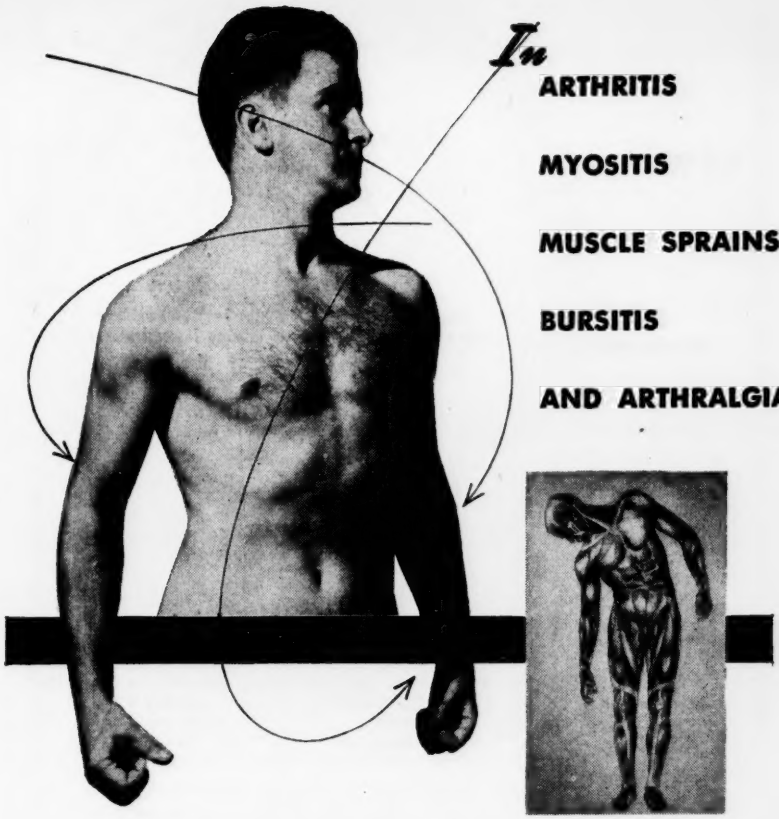
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THE MEN ON THE COVER are Ernest E. Irons, M.D., who will assume presidency of the American Medical Association in June, and Rollo E. Dyer, M.D., Director of the National Institutes of Health. The award is in recognition of the Institutes' research into causes and spread of disease and application of this new knowledge. *(See page 14.)*

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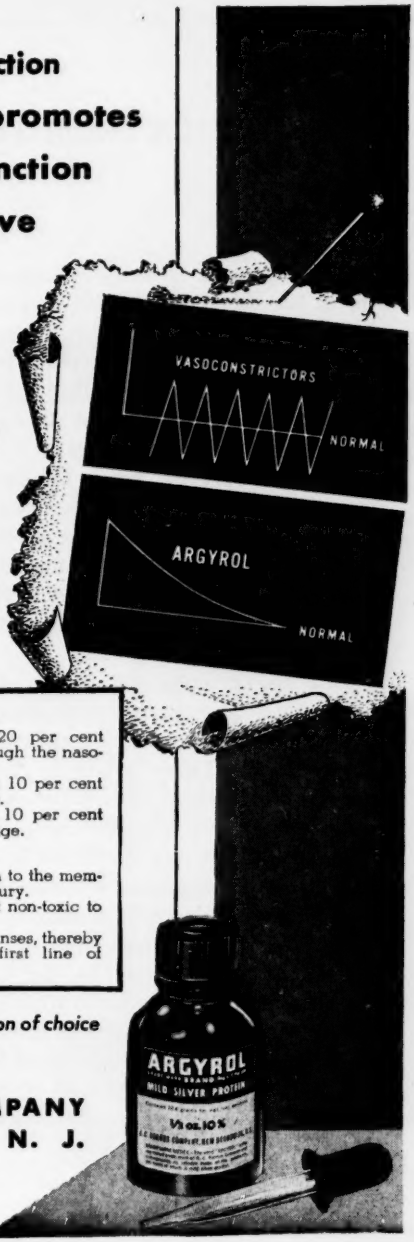
PATIENTS I HAVE MET 126

The "Symposium on Progress in Basic Research," pages 53 to 79, is adapted from selected papers delivered at the December meeting of the American Pharmaceutical Manufacturers' Association in New York City.

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Dear Reader:

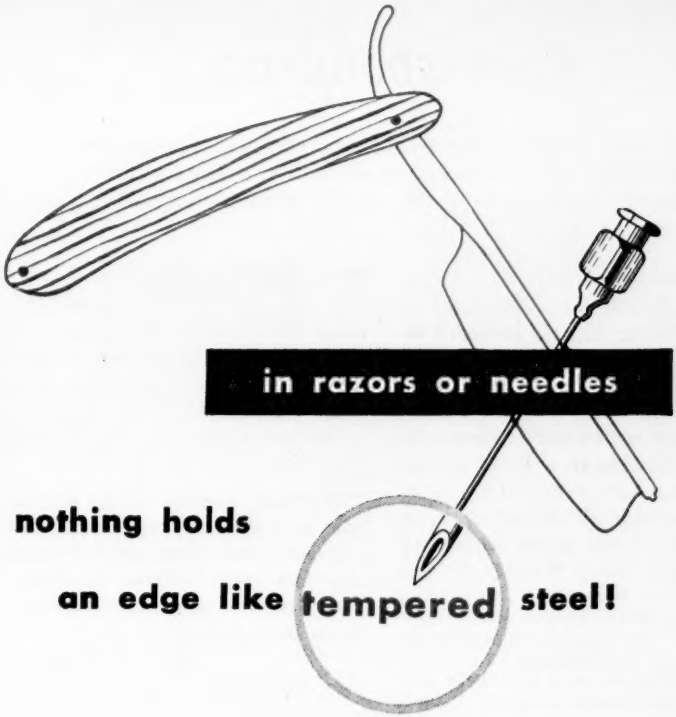
This issue of MODERN MEDICINE was prepared to inform you of the advances in basic research that apply to everyday practice. Incidentally it is an acknowledgment of the investigative scientist as an indispensable ally to the clinician. The picture on the cover is symbolic. The Symposium presented on page 53 carries on the theme of alliance between fundamental research and medical practice.

The award presented to Dr. Dyer by Dr. Irons *(see cover)* was recognition, by the American Pharmaceutical Manufacturers' Association, of the accomplishments of the National Institutes' research into the causes and transmission of disease, and application of that knowledge. The papers that comprise the Symposium, delivered at the same meeting, summarize that knowledge.

In his presentation address, Dr. Irons emphasized that "governmental assistance in promotion of research must be considered as an adjuvant to fundamental research carried on in universities." "There is always danger," he said, "of government domination of institutions which accept government assistance no matter how meticulous the safeguards."

This danger was also noted by Dr. Dyer, who pointed out that elaborate measures had been taken to assure freedom of private research and minimize government control. He described the programs of intramural research, the grants and fellowships administered by the United States Public Health Service, and expressed his confidence that these "promise definite rewards in promoting the future health of the nation."

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Correspondence

Communications from the readers of MODERN MEDICINE *are always welcome. Address communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

Outdoor Signs in Florida

TO THE EDITORS: I was interested in the letter by Dr. Ronald in which he remarks that there should be laws compelling a physician or any person with the title "Dr." to write on his outdoor sign what kind of doctor he is, so that the layman will not be misled into thinking every "Dr." is an "M.D." *(Modern Medicine,* Dec. 15, 1948, p. 14). I will quote Section 14, Chapter 458, Florida Statutes of 1941:

> Every person licensed . . . to practice medicine, surgery, osteopathic medicine, chiropractic, naturopathy, chiropody, podiatry or any other branch . . . shall cause to be placed and kept in a conspicuous place at each entrance . . . words or proper abbreviations . . . in lettering not less than 2½ inches in height and one inch in width clearly denoting the particular kind or branch . . . of . . . the . . . healing art . . . practice[d].

While this act obviates the problem of lay doctors to a great extent, there are still many violations.

HAROLD D. VAN SCHAICK, M.D.
Miami Beach

Enlightened Discussion

TO THE EDITORS: Your article on socialized medicine was very interesting and enlightening. I am preparing a paper on the subject for a staff meeting and hope to arouse more doctors here to work actively in fighting socialization of medicine.

CHARLES J. RUTH, M.D.
Seattle

Not as Deep as a Well

TO THE EDITORS: The incision advocated by Drs. Henrik F. Lange and Herbert Palmer of Oslo for obtaining a blood sample is said to be 4 mm. deep, 3 mm. wide (Jan. 1, 1949, p. 42).

'Tis not as deep as a well nor as wide as a church-door, but 'tis enough; 'twill serve!

It would, I think, be apt to cause a free or even copious flow of blood without resort to pressure or massage. The incision is certainly too deep for a puncture and a red blood cell count thirty seconds later.

PERCY FRIDENBERG, M.D.
New York City

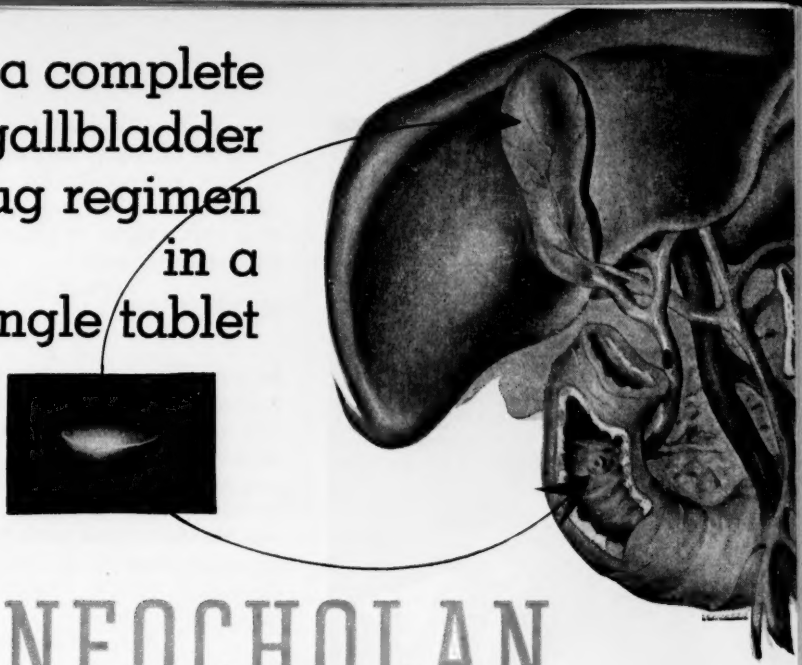
Medical Motion Pictures

TO THE EDITORS: For some time now I have been a regular reader of your excellent magazine. Of particular interest to me in your January 1 issue was the article on Medical Motion Pictures.

I am one of nine residents here at the Methodist Hospital in Peoria who have been holding weekly meetings on various topics of current interest. Since reading your article it has occurred to us that these meetings might be greatly improved by some movie on the particular topic of discussion. Since noting your offer to prepare movie lists on request we have decided to investigate the matter further.

May we please have a list of movies

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PATRICK A. T. TRIPE, M.D.

Peoria, Ill.

► TO THE EDITORS: Our School of Nursing would especially appreciate lists of the topics of orthopedics, pharmacology, public health nursing, gynecology, urology, dermatology, and emergency and first aid. We would also like lists of films suitable for showing at meetings of the hospital medical staff at the St. Francis Hospital School of Nursing.

SISTER MARY IMMACULATE

Kewanee, Ill.

► TO THE EDITORS: I represent a medical student organization at the University of Michigan. We wish to supplement our training with medical movies. Will you please send me a listing of the different medical films that can be obtained?

JOHN C. HEFFELFINGER

Ann Arbor, Mich.

► TO THE EDITORS: I would very much appreciate receiving a list of motion pictures relating to any phase of otolaryngology. These movies are to be presented at the staff conference at the Brooklyn Eye and Ear Hospital.

SAMUEL ZWERLING, M.D.

Brooklyn

¶The number of requests for Topical Lists has been much larger than anticipated, and has temporarily swamped the editorial staff. Orders are being taken care of as rapidly as possible, however. In another week or two we hope to have most lists completed.—Ed.

(Continued on page 21)

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1. Jolliffe, N.: New York State J. Med. 41:1383, 1941.
2. Spies, T. D.: J.A.M.A. 122:399, 1943.

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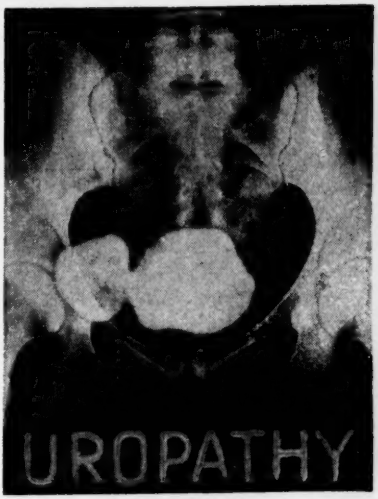
TO THE EDITORS: In your Washington Letter (Jan. 1, 1949, p. 78) you state that the Army has done "everything short of a draft of doctors to supply the needed Army doctors."

This is what the Army would like everyone to believe, but it is not quite true. Perhaps it might be more factual and helpful if we were to realize that the Army has—both during the recent war and since—done about everything it possibly could to destroy the interest of the physicians of the U.S.A. in the military service and to create just the situation which now obtains.

The wholesale wastage of medical officers during the war by improper assignment and by the large numbers held for long periods in casual camps, the failure to grant deserved promotions during active duty whilst "regulars" were being advanced, and the frequent occurrence of situations wherein a "regular officer" of lesser knowledge and experience dictated procedure, all combined to engender disgust and depress morale among Reserve Medical Officers.

Furthermore, even recourse to the Surgeon General was of no avail, for he had become—and still continues to be—but a Technical Staff Officer devoid of initiative and command.

Then, since the cessation of hostilities, civilian doctors have been further disgusted by the wholesale denials of retirement pay to Reserve Officers because of disabilities incident to active service; by the program for peacetime periods of active duty for reservists wherein the officer is told he can have orders *if* he will serve in the grade he held in 1941 (the "regulars" having helped each other to all the higher ranks); by the horrible lack of organization and training for the Reserve



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Subnormal growth in children

Anorexia, nausea, edema, circulatory disturbances and fatigue associated with beri-beri.

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Component; by the current insistence that a reservist *must* accept tours of active duty or be transferred to the Inactive Reserve and thus lose any chance for promotion, longevity retirement provisions, or proper assignment; and by the amazing contradiction of the policy pronouncement which says that medical officers are to be used solely for professional work and then declares that only active service in the Army will provide such competence.

Lastly, those civilian doctors holding commissions in the Reserve who have attended so-called unit training sessions have found that they were expected to waste two or more hours listening to talks upon subjects suitable for newly recruited enlisted men of the Medical Department and of no value whatsoever in officer training.

Ponder these *facts* and decide whether the statement in your article of recent issue was truly factual.

I realize that you may infer that I state these things because I am unpatriotic or because I am "sore" at the treatment I received while in the Army.

The following will prove that neither inference is true: I served in both world wars as a Medical Reserve Officer and in both was assigned as a chief of service and as a consultant. I hold a commission as colonel, Med. Res., U.S.A., and throughout my tours of duty have had ample prerogatives and excellent assignments and rela-

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A Special Article

MODERN MEDICINE APRIL 1



~~dysmenorrhea~~

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tions with both senior and junior officers.

I write in behalf of the majority of Reservists who did not have so fortunate a time and who today are suspect as "slackers" because they are disinclined to repeat their unpleasant experiences.

ARTHUR GROVES HULETT, M.D.
East Orange, N. J.

P.S. The remedy appears to lie in proper action by Congress, not for enactment of any "medical draft" but for the inauguration of the necessary changes in policy at high levels which will remove the present and justified resistance by Reservists.

A. G. H.

New Proctologic Society

TO THE EDITORS: A new proctologic organization has been established by charter in New York State. This organization is known as the International Academy of Proctology. Charter membership, associate fellowship, and fellowship are now open.

Further information and applications may be obtained by writing to Alfred J. Cantor, M.D., 43-55 Kissena Blvd., Flushing, N.Y.

ALFRED J. CANTOR, M.D.
Flushing, N.Y.

To Send to Egypt

TO THE EDITOR: I am an Egyptian pediatrician from Cairo, nominated as voluntary assistant in the Children's Diseases Department at Johns Hopkins. I read your journal, which some of my colleagues receive from you. Kindly send it to me also, together with some of the last six numbers as I want to send them to some of my colleagues in Egypt.

GILBERT THOS. IBRAHIM, M.D.
Baltimore

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Questions & Answers

All questions received will be answered by letter directed to the petitioner; questions chosen for publication will appear with the physician's name deleted. Address all inquiries to the Editorial Department, MODERN MEDICINE, *84 South Tenth Street, Minneapolis 3, Minnesota.*

QUESTION: I have a twenty-five-year-old woman patient with a small lesion of the left cornea resembling arcus senilis. Her physical examination was essentially negative, except for a cystic right ovary and impacted wisdom teeth. Blood count and sedimentation rate are normal; urinalysis and second strength purified protein derivative, negative; basal metabolism, minus 8; Kahn, negative; serum calcium, 14 mg.; phosphorus, 7.4 mg.; plasma protein, 6.2 gm.; and alkaline phosphatase, 3.1 Bodansky units. The patient has no symptoms except fatigue, aching legs, and nervousness to the extent of biting her fingernails. She is a housewife with an eighteen-months-old child. There is no evidence of a parathyroid tumor though no bone roentgenograms have been made. Is the slight elevation of calcium and phosphorus significant? What course should I follow?
M.D., Georgia

ANSWER: *By Consultant in Internal Medicine.* Elevation of serum calcium indicates a disturbance in the physiologic mechanisms which regulate the metabolism of calcium and phosphorus. High calcium figures are commonly associated with low readings for inorganic phosphate.

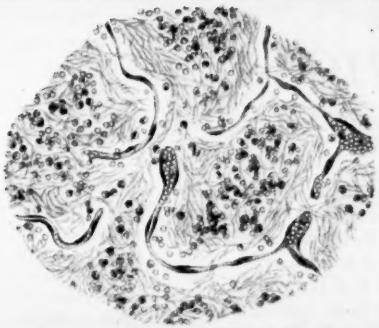
Hypercalcemia may be due to primary hyperparathyroidism, physiologic hyperparathyroidism of pregnancy in the last trimester, renal hyperparathyroidism, Cushing syndrome, and increased bone destruction in metastatic malignancy, multiple myeloma, leukemia infiltrations, and polycythemia vera. Overdosage with vitamin D and dihydrotachysterol may also be a cause. Hyperphosphatemia may be due to hypoparathyroidism, renal insufficiency, excessive doses of vitamin D, particularly as employed in the treatment of chronic arthritis, and prolonged exposure to ultraviolet.

These conditions should be considered in the differential diagnosis.

QUESTION: I have a patient who is five months' pregnant. She has a three-year-old son. Two years ago she miscarried at five months, and last spring a full-term infant died eighteen hours after birth with no instrumentation or difficulty during delivery. The mother is type A positive, the father type B negative, and the boy type B positive. Is the Rh factor important when the mother is positive? If so, what type and factor blood should I be prepared to use? What is the test to determine antibody formation in the mother?
M.D., New Mexico

ANSWER: *By Consultant in Obstetrics.* This problem would be helped by information concerning the blood type and Rh status of the baby that expired. Lacking this information, a complete study of the mother's Rh status including the subgroups may disclose that she is negative for one of the subgroups of the Rh factor; if so, the husband should be tested to see whether he is positive.

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If antibody formation is a possibility, the mother's blood may then be tested with the specific Rh antigen to determine the titer of the antibodies. The type of blood used if transfusion becomes necessary should be Rh negative including the appropriate subgroups.

QUESTION: A diagnosis of Boeck's sarcoid has been made from a liver biopsy of a woman patient. She has had repeated gastric and occasional rectal hemorrhages and, while hospitalized, required many transfusions. One of the few nodules in the skin has been biopsied. Also, the bones in her hands have been x-rayed. Please give me the possible etiology, course, prognosis, and treatment of Boeck's sarcoid.

M.D., Tennessee

ANSWER: *By Consultant in Internal Medicine.* Sarcoidosis is pathologically benign lymphogranuloma. The etiology is unknown. The lesions resemble those of tuberculosis or Hodgkin's disease. The symptoms and course depend upon the site of major involvement, that is, skin, lungs, bones, lymph nodes, spleen, gastrointestinal tract, or other organs or structures containing lymphoid tissue. The disease is not fatal. Treatment is symptomatic, and no specific therapy is known.

QUESTION: What is the treatment for bags under the lower eyelids?

M.D., New York

ANSWER: *By Consultant in Plastic Surgery.* Bags under the lower eyelids not due to pathologic conditions, such as edema, are usually due to a progressive loss of the elasticity of the skin of the eyelids by stretching. The condition occurs from middle age on. The treatment is excision of the redundant skin.



routine for discovery

The national total of undiagnosed or "unknown" diabetics may run from a million to two or even three.[1,2] Modern treatment, when promptly initiated, can do much to prevent metabolic decompensation and to minimize diabetic complications. Therefore, the clinical revealment of diabetes mellitus at an early stage is essential.

Thus, "all patients who present themselves to the physician for an examination should have a routine urine examination."[3] In this phase of practice, the advantages of *Clinitest*® tablets for urine-sugar analysis are considerable.

Clinitest is dependably accurate, yet it takes only a few seconds to perform. The test is simple—no external heat need be applied; interpretation is by direct color comparison. *Clinitest* is convenient both for the doctor's office routine and for the diabetic patient's prescribed sugar-level checkups.

(1) Joslin, E. P.: Postgraduate Med. 4:302 (Oct.) 1948. (2) Kemper, C. F.: Rocky Mountain M. J. 45:1092 (Dec.) 1948. (3) Pollack, H.: New York Med. 4:15 (Dec. 5) 1948.

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A "SPONGE-STICK" SPONGE. RONDIC Sponges are suitable for use with "sponge-stick" or sponge forceps in any field of surgery. They have been used successfully in abdominal surgery, vaginal and rectal repair, etc. In any situation where a "sponge-stick" is used, RONDIC Sponges are ready for use.

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Tonsil sponge and pack. Prepping and painting.
Hypo, intravenous or hypodermoclysis wipe.
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RESEARCH TO IMPROVE TECHNIC...TO REDUCE COST

Forensic Medicine

COMPILED BY ARTHUR L. H. STREET, LL.B.

PROBLEM: A young man, at the request of his fiancée's father, submitted to an examination to determine whether he had a venereal disease. The physician erroneously reported that the plaintiff was so afflicted, and the marriage engagement was broken. Was the plaintiff entitled to damages even though the diagnosis was not made as a prelude to treatment?

COURT'S ANSWER: Yes.

The Massachusetts Supreme Judicial Court decided that the breaking of the marriage engagement was not too remote a damage to sustain the action. It was declared immaterial that the purpose of the examination was to obtain information and not medical treatment (166 Mass. 585, 44 N. E. 992).

PROBLEM: A physician was engaged by an employer to treat an injured workman. The physician misrepresented the nature of the injuries, thereby inducing the laborer to delay filing of a workman's compensation claim. Was the employer liable for damages to the injured man?

COURT'S ANSWER: Yes.

In this Indiana case the United States Circuit Court of Appeals, Seventh Circuit, recognized the general rule of law that a physician in treating and diagnosing cases is an independent contractor and not an agent of one who has employed him to treat another. It also recognized the related rule that an action based upon negligence or unskillfulness of a physician engaged by one person to treat another cannot be maintained against the employing person unless he is guilty of negligence in selecting the doctor. These rules rest upon a theory that employment of a physician implies that he is not bound to follow the employer's directions but is free to exercise discretion in treating the patient.

But the court added that the case presented did not involve mere negligence of a doctor in performing his professional duty, but involved his fraudulent misrepresentations to one to whom the doctor, as a representative of the defendant, owed the duty of disclosing the truth. It was within the scope of the employment of the doctor to protect the rights of the plaintiff under the Indiana Workmen's Compensation Law, insofar as those rights were affected by injuries received by the plaintiff in the course of his employment by the defendant.

The protection afforded the employer and his insurance carrier by having the employer's company doctor in charge is obvious since the employee, for all practical purposes, is required to accept such services in order to protect his claim for compensation. It follows that the employer and the company doctor owe a duty to an injured employee to protect the em-

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RHUS TOX ANTIGEN is the *original* preparation for desensitization and treatment in ivy, oak, and sumac dermatitis.

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For prophylaxis, many susceptible persons can be desensitized by preseasonal injections.

RHUS TOX ANTIGEN is oil-free; nodule formation and tumefaction are minimized. The hydro-alcoholic solution assures prompt dispersion.

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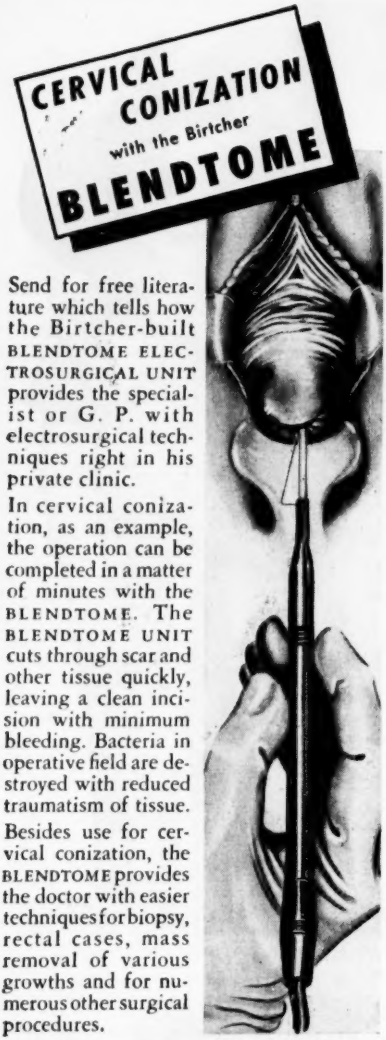


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ployee's interests in respect to his claim for compensation.

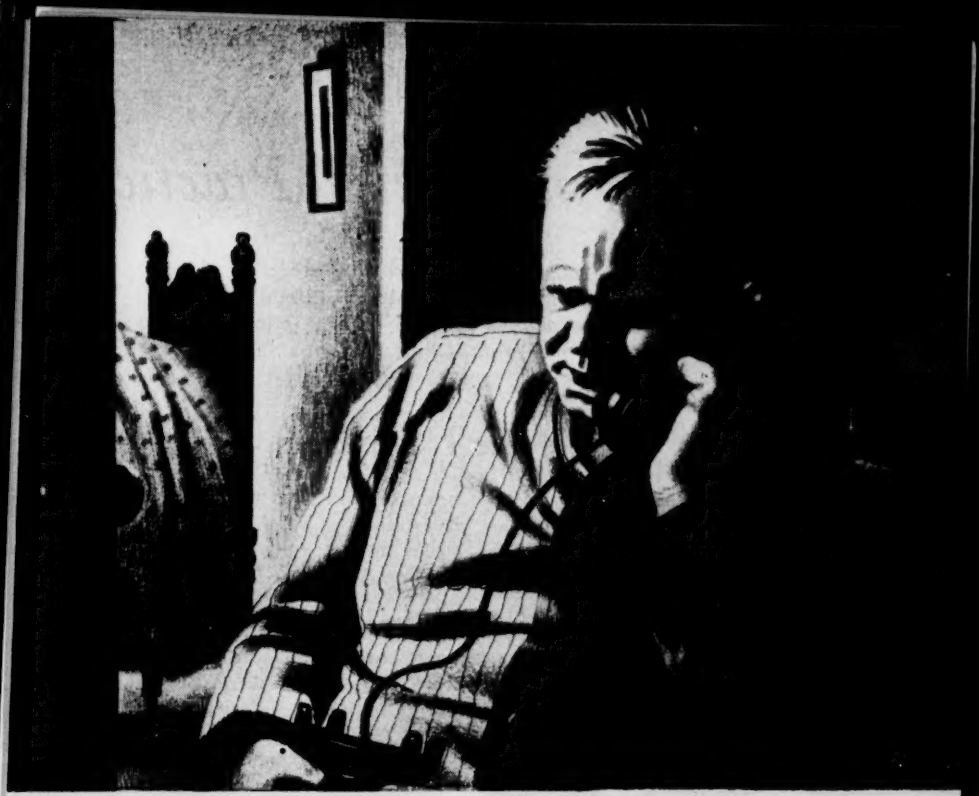
The test is not whether the doctor was specially authorized to make fraudulent representations, but whether the false representations were made within the scope of his employment (112 Fed. 2d 271).

As supporting its conclusions the court cited a decision of one of the Texas Courts of Civil Appeals (105 S. W. 2d 403) to the effect that an injured workman was entitled to have set aside a settlement made with his employer under misrepresentation made by the employer's doctor that the injured woman would be well and able to resume work soon. A decision of the Pennsylvania Superior Court is to the same effect (115 Pa. Super. Ct. 141, 174 Atl. 919).

PROBLEM: An alien applying for medical license in Illinois is required to declare intent to become a citizen, and to apply for naturalization within thirty days after becoming eligible. Before natives from the Philippines could be naturalized, a woman was admitted to the country as a nonimmigrant alien visitor. When the law was amended to permit entry from the Philippines *on a quota basis*, she applied for a medical license in Illinois and passed an examination. The governing board, however, refused to issue a license, because the naturalization authorities would not accept her declaration of intent until her name had been reached upon the immigration quota waiting list. Could she compel issuance of the license?

COURT'S ANSWER: No.

The Appellate Court of Illinois, First District, decided that until applicant's name was reached on the immigration waiting list her status would remain that of an alien visitor, and not that of one who was qualified to, and had made the necessary declaration of intent to become a citizen (82 N. E. 2d 496).



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Refreshers in General Practice

This department comprises material excerpted by W. R. Feasby, M.D., Executive Editor of Modern Medicine of Canada, *from his new book* Medical Manual, *published by the University of Toronto Press, Toronto, Canada.*

Care of the Newborn

Dehydration in newborn

Hypodermoclysis of glucose in saline, 5%, 10 cc. per pound of body weight. Push glucose solution and water by mouth.

Inanition fever

The same treatment as that outlined above for dehydration.

Jaundice

Physiologic type, no treatment necessary; occasionally a hypodermoclysis helps if child is drowsy and listless at height of jaundice.

Ophthalmia neonatorum

Prevention: 1% of silver nitrate or 25% of fresh argyrol in eyes at birth.

Specific treatment: 25% sulfathiazole ointment or penicillin ointment.

Conjunctivitis or plugged tear duct

Aqueous metaphen solution, 1:2,500, three times daily, massage tear duct.

Blue spells

Examine for congenital malformation of heart or lung, birth injury, or atelectasis. If none of these is found, the child probably has tetany of the newborn with a high phosphorus and low blood serum calcium. In any case, with blue spells, twitching, convulsions, laryngospasm, and breath-holding, treat as tetany of newborn unless it is ruled out.

Treatment: Give a continuous intravenous of glucose in saline, 5%, and add, at twelve-hour intervals, calcium gluconate solution, 10%, 10 cc. to the intravenous solution. For a newborn child, an intravenous should run about 100 cc. every twelve hours.

Hemorrhagic disease

Prevention: Give mother 5 mg. of synthetic vitamin K by mouth at onset of labor, or 2 mg. parenterally if less than four hours from delivery. Repeat in twenty-four hours if the labor lasts.

Specific treatment: Give infant a potent form of vitamin K by intramuscular injection at birth.

Diarrhea

Overfeeding in breast-fed babies, give water before feeding. Artificially fed, use protein milk, barley water, or glucose, 10%.

Medication:

Tr. camph. co.	min. 2-3
Bis. subsalicylate	gr. 2
Mist. creta ad	dr. 1

Dr. 1 q. 4 h. or after each loose stool

Feeding

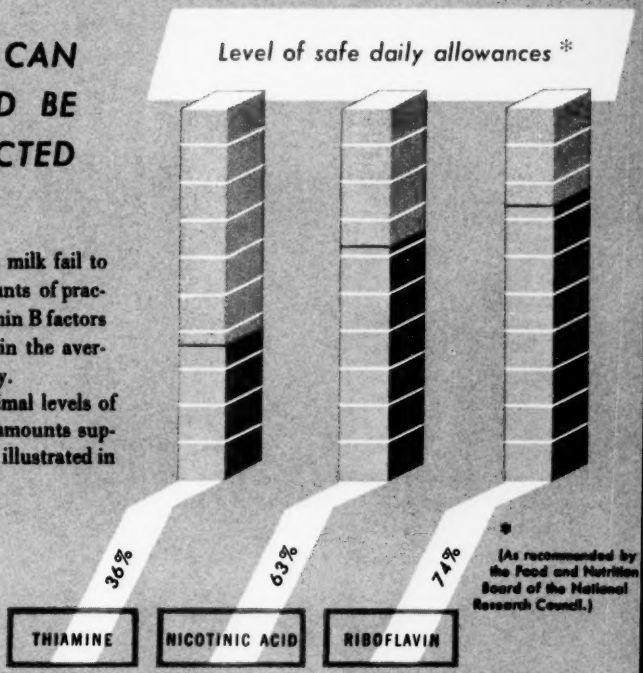
First day: Glucose or lactose, 5%.

These are nutritional gaps in human milk

. . . THEY CAN AND SHOULD BE CORRECTED

BOTH human and cow's milk fail to provide sufficient amounts of practically all essential vitamin B factors for optimum nutrition in the average diet of early infancy.

The gap between optimal levels of these vitamins and the amounts supplied by human milk is illustrated in the chart to the right.



SPECIFICALLY formulated to correct these "nutritional gaps" in the infant's diet, White's Multi-Beta Liquid, in dosage of five drops daily, raises the intake of all clinically important vitamin B factors to optimal levels—supplying these factors *in amounts proportionate to their usual insufficiencies.* Notably stable, non-alcoholic, in "drop-dosage" form. Freely soluble in milk mixtures and orange juice. White Laboratories, Inc., Pharmaceutical Manufacturers, Newark 7, N. J.

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all essential vitamins

water miscible

disperses quickly, completely

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pleasant flavor

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Thiamine Hydrochloride	1.0 milligram
Riboflavin	0.4 milligrams
Pyridoxine Hydrochloride	1.0 milligram
Sodium Pantothenate	2.0 milligrams
Nicotinamide	10.0 milligrams
Ascorbic Acid	50.0 milligrams

one of White's INTEGRATED pediatric vitamin formulas

Breast feeding: Every eight hours, starting twelve hours after birth, for twenty-four hours, then every four hours for forty-eight hours, then every three hours or every four hours depending on size. Nurse on one side only 5 minutes for first four days, then both sides, five to ten minutes each.

Feeding interval:

q. 8 hr. for half a day.
q. 4 hr. second and third days.
q. 4 hr. × 5 or 6, over 7 lb.
q. 3 hr. × 7, between 5½ and 7 lb.
q. 3 hr. × 8, under 5½ lb.

Supplementary feeding:

	*Milk** *oz.*	*Water to make up to oz.*	*Carbohydrate oz.*
2nd day	3	20	½
3rd day	7	20	½
4th day	8	20	½
5th day	9	20	½
6th day	10	20	½
7th-14th day	10	20	1
14th day	15	25	1

*With evaporated milk take one-half volume and make up to same amount with water.

Amount of feeding: 2 to 3 oz. per pound of body weight in twenty-four hours divided by number of feedings.



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In Pertussin—the active ingredient—Extract of Thyme (unique Taeschner Process) effects relief of coughs not due to organic disease, because it:

1. Relieves dryness by stimulating tracheo-bronchial glands.
2. Facilitates removal of viscid mucus.
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Pertussin is entirely free from opiates, chloroform and creosote. It is well tolerated by adults and children and is pleasant to take. It has no undesirable side action.

PERTUSSIN
For Children, Adults and the Aged
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NEW YORK 13, N. Y.

Medical Films

Pertinent information concerning new releases on medical subjects and other recent films that are still available.

New Releases

MANAGEMENT OF THE FAILING HEART *by* Harry Gold, M.D. 16 mm., sound, color, 1,200 ft. Loan. Medical Film Guild, 167 West 57th St., New York 19.

THE FUNCTION OF THE EAR IN HEALTH AND DISEASE *edited by* H. G. Kobrak, M.D., et al. Sound. Loan. Brandstater-Hammond, 11 East 44th St., New York 17.

Currently Available

About three weeks should be allowed for booking because many of these films are in considerable demand. Except when noted, all films are silent and 16 mm. Black and white films are designated b/w, otherwise the film is in color.

CANCER OF THE LUNG AND ESOPHAGUS. The following films available on loan from American Cancer Society, 47 Beaver St., New York 4:

SURGICAL EXTIRPATION OF INTRATHORACIC TUMOR *by* Frank S. Dolley, M.D., *and* John C. Jones, M.D. 1 reel.

SURGICAL TREATMENT FOR CARCINOMA OF THE LOWER END OF THE ESOPHAGUS *by* Philip Thorek, M.D. 1,200 ft.

TERATOMA OF THE LUNG *by* Harold Brunn, M.D. 1 reel.

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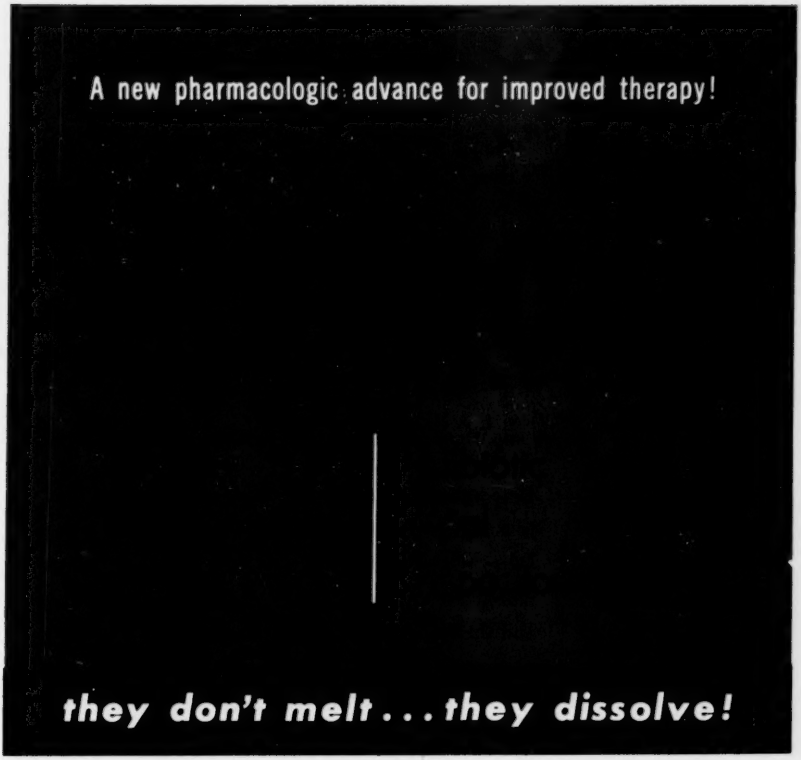
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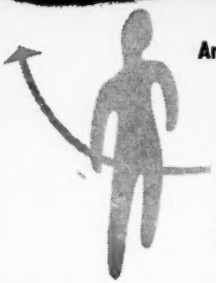
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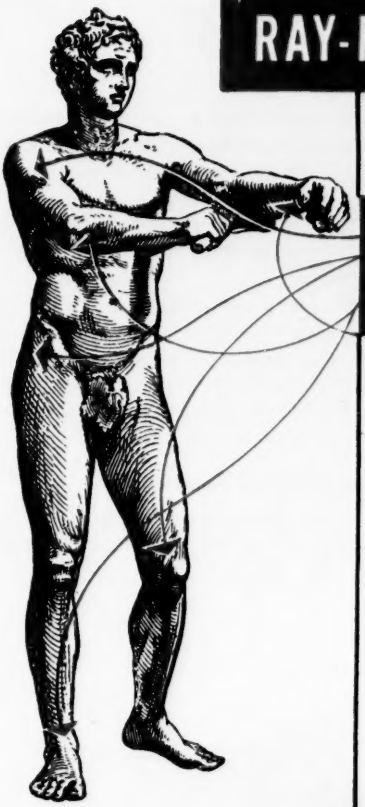


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Washington Letter

AEC Expects More from Doctors

Chairman David E. Lilienthal of the Atomic Energy Commission is convinced that physicians could do more than they are to spread the story of what radioactive isotopes can do in the field of medical sciences. Apparently Chairman Lilienthal hopes to swing the AEC medical organization to his viewpoint and is personally pushing this specialized effort in every way he can.

What the Doctor Can Do

Lilienthal believes that the public has instinctive confidence in doctors and that it prefers to learn about medicine from them. Articles on radioactive isotopes in popular magazines help, but the story is not being put over the way it should be.

The feeling is that doctors aren't as helpful as they might be for two reasons:

[1] Too many physicians are lax in following developments in radioactive research and application. [2] Even those who do keep up in this field seem to be reluctant to discuss the subject with patients.

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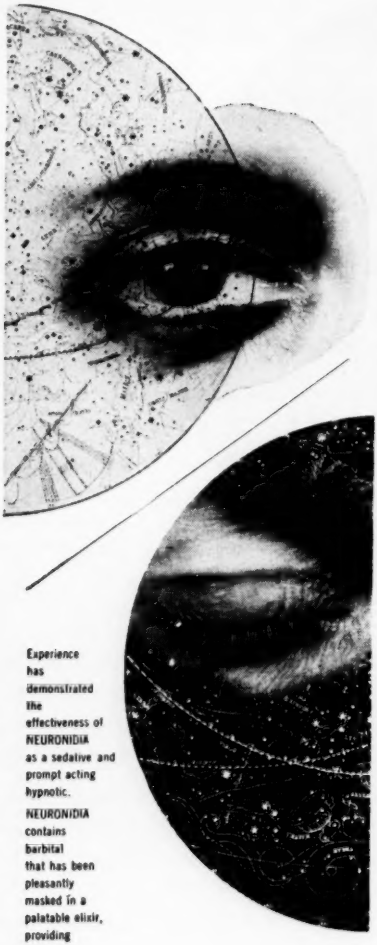
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(1) Reznikoff, P., and Goebel, W. F.: *Jour. Clin. Investigation*, 16:547, July, 1937. (2) Teeter, E. J.: *J.A.M.A.*, 127:973, Apr. 14, 1945. (3) Tompsett, S. L.: *Biochem. Jour.*, 34:959, June, 1940.

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and Medicine, Atomic Energy Commission, Washington, D.C. AEC prefers to deal with medical associations, but is willing and eager to take care of any individual requests. *Nuclear Science Abstracts,* published bimonthly by the Commission, is free to libraries and available at nominal cost to individuals.

Areas of Danger

The AEC's fifth semi-annual report doesn't gloss over unsolved problems, the areas of distinct danger. For example, while radiation can be detected with accuracy, early radiation injuries cannot be. The report admits this, but says certain studies at Oak Ridge and Argonne may develop tests for early detection of radiation injury.

Another problem concerns beryllium—an element used to slow down neutrons in nuclear reaction. Beryllium is recognized as the cause of acute and chronic lung disease, but the AEC is hopeful that eventually 90% of the beryllium hazard can be eliminated.

Learn to Live with Radiation

The safety factor in dealing with radiation, potentially the most sensational story in the AEC report, was discussed by Chairman Lilienthal. He emphasized not the dangers but the efforts to eliminate them. He said:

Handling the waste disposal problem is a part of learning how to live with radiation. The way we have become adjusted to unfamiliar things before was to learn as much as we could about them; to keep our shirts on; not to get overly emotional or hysterical; and not to escape from things by emotional outbursts.

Radiation is just as much a natural phenomenon as anything else. The fact that we have by intelligence multiplied it does not change that fact. I am sure there will be a good deal of shock, at first, as we get used to these facts. But I am sure also that just as we were able by our

(Continued on page 112)

liver disorders

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fat infiltration
functional impairment
toxic hepatitis
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* Moschcowitz, E.: Laennec Cirrhosis: Its Histogenesis with Special Reference to Role of Angiogenesis, Arch. Path., 45:187 (1948).

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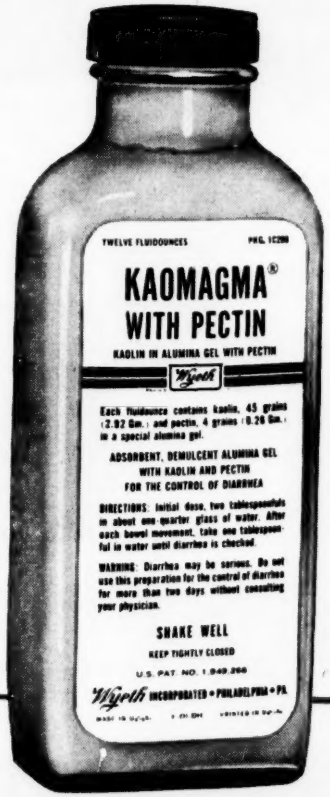
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Symposium on Progress in Basic Research

Trends in Drug Therapy

AUSTIN E. SMITH, M.D.*
American Medical Association, Chicago

ONE of the reasons for failure to obtain the most out of research and its application may be a failure to understand that people are different, that they approach and interpret problems differently, and that their objectives and reactions are not always the same. A recent editorial in the *Journal of the American Medical Association* drew attention to this problem. The editorial reads in part:

> Differentiation or individuality is a potent factor in every social problem. One of the crucial tests in understanding people is to know how they are alike and how they differ from one another. Probably the differing qualities are the very basis of our democracy. If we were all the same and had the same likes and dislikes, there would be no need for freedom. We would all fall readily into the same pattern of life, and difficulties would never arise. Because we do have individuality we want freedom to make our own decisions and live our own lives.

Two thoughts pertaining to possible trends in basic research arise in my mind:

1] There is increasing recognition that all of us are different, and must be so regarded when our illnesses are studied, or when we, on the other hand, undertake research studies.

2] There is increasing consideration of *why* a remedy or technic works, rather than just *what* works. This is necessary if we are to continue with the development of treatment measures in the way in which they have been advanced in the past ten years. The discovery of the true cause of a disease opens the door to the development of a cure. Similarly, the discovery of how or why a remedy is effective permits the development of better remedies, or at least suggests the best possible way to use the first remedy.

* Director, Division of Therapy and Research, the American Medical Association; Secretary of the Association's Council on Pharmacy and Chemistry.

All of this, of course, calls for greater focusing of attention on so-called fundamental research. Frankly, I think the term "fundamental research" is overworked and misleading. How can we truly differentiate between fundamental research and applied research when the only difference, for all practical purposes, is a matter of time? What is a so-called fundamental discovery today is applied tomorrow, or as soon as we learn the means of application.

However, since many still divide research into two broad groups, may I do the same, to warn of the importance of the participation of industry in so-called fundamental research? T. Keith Glennan, president of the Case Institute of Technology, has recently said:

> In 1930, the dollar volume of research and development expenditures in the United States stood at $166,000,000, with 70% coming from industry and the remainder fairly evenly divided between the federal government and higher educational institutions. Aside from a recession in 1934, the dollar volume of this scientific effort grew steadily until it reached a total of $345,000,000 in 1940. Industry's percentage of participation remained constant, but the contributions of the federal government had expanded to a point where they more than doubled those of education.

I want to emphasize the complexity of medical research and to draw rather pointed attention to government participation in research, not because I am opposed to any such participation, but because I wish to stress the importance of proper balance.

Often it is difficult to arouse interest in a problem until the darkest side of the picture is presented, almost in melodramatic style. Perhaps this merely reflects the complacency one assumes when he lives for years in comfortable and happy surroundings.

No one can deny the importance of the contribution that has stemmed from such laboratories as the National Institutes of Health. These contributions have been many and of far reaching significance. No one would wish to see the status of this organization so altered that it would be a mere skeleton.

This does not mean, however, that we should not be interested in problems similar to those under exploration at the Institute. It does mean that our scope of interest should be sufficiently broad to permit recognition of what each participant in a given program can and should offer. Industry has made, and is making, some real contributions; but it should not feel confined to its present efforts. Nor do I think it wishes to be so confined.

There is much talk today about shortages of funds, personnel, and other material aspects. How much is real and how much is fancied is hotly debated by many, but I believe that any existing shortages can be relieved, in part, by more careful planning concerning research programs. Fortunately, this is one of the trends in today's research.

Why, for example, should an outstanding researcher be asked to examine a standard formula that has been known and used for years by a number of others unless, of course, there is reason to question certain claimed facts, or unless new findings are anticipated? Fortunately, scientific meetings and other sessions are offering a means of overcoming unnecessary and senseless duplication of study. Why, as a further example, should researchers be asked to devote their

time to the exploration of problems that can be settled solely by armchair planning?

Another trend in research is concerned with the actual diseases in need of study. In our search for new remedies, we must not forget that our medical problems are changing.

Today we have less need to be concerned with pneumonia, for example, but more need for concern over cancer and degenerative diseases in general. Why? Simply because the age of the population is increasing.

Some people seem to have overlooked the fact that the increase in cancer and heart disease is a healthy sign. It indicates that medical progress has lengthened our life span so that we now die of diseases affecting the elderly, instead of those afflicting primarily the young. It is almost incredible that in less than fifty years we have increased the life span of man by eighteen years. At the same time, we have provoked more research in fields formerly of somewhat limited interest.

It is an equally good sign, at least as an indication of medical progress, that accidental deaths now pose a greater problem for the working population than do the so-called normal diseases. There are about 100,000 accidental deaths a year. How many are preventable is currently under discussion, but these deaths should play an important part in our thinking when we examine vital statistics and plan for the future on the basis of currently available facts.

Furthermore, in our planning we must not forget that, no matter what we do, all of us will die sometime. Neither medical scientists nor anyone else can prevent death; they can only change the cause of death and the age at death. They can prolong life, make people freer of illness, and permit them to care for themselves more ably, but they cannot prevent the eventual arrival of death.

For that matter, it is difficult to visualize what can be done for and with millions of people whose life expectancy may be increased by another eighteen years in the next forty to fifty years. Unfortunately, such facts are ignored, deliberately or otherwise, by some of our would-be planners for a utopian existence, who create and twist statistics to satisfy personal ambitions.

And finally, we cannot forget the cost of research, clinical or otherwise. I mention this only briefly, and only to emphasize that it is of considerable importance. Good research is not cheap. But then progress in general is made only on the basis of good research. So, in the long run, sound research is not expensive, as even those responsible for the declaration of dividends will admit when they observe what can be produced by good research.

Thus, it behooves all who are interested to be aware at all times of the changes that occur in our health picture and of the significance of these changes. Medical research is not static. Nor will it ever be static if it is always approached with open minds, willing hearts, and sustained desires.

The above article and the other papers in this issue comprising the "Symposium on Progress in Basic Research" are adapted from selected addresses delivered at the December meeting in New York of the American Pharmaceutical Manufacturers' Association.

Investigation of Blood Disorders

ROY R. KRACKE, M.D.*
Medical College of Alabama, Birmingham

BASIC research in the field of blood disorders continues to make satisfactory progress. This is particularly true of the anemias, not only because of the advent of folic acid but more because of the discovery of vitamin B_{12}. All anemias can be roughly divided into four large groups: the iron deficiency anemias, the macrocytic types, the hemolytic anemias, and the refractory marrow aplasias.

IRON DEFICIENCY

There has not been substantial progress in research in *iron deficiency anemias* within recent years, although considerable fundamental knowledge continues to accumulate, especially concerning the metabolism of iron. Further progress is promised from tracer studies with tagged materials.

The treatment of iron deficiency anemias remains essentially the same. There seems general agreement that nearly all these patients should be treated with ferrous sulfate. For some patients who cannot tolerate this preparation it can be given in very small divided doses, spread over a great many hours each day. There seems little indication for other preparations and certainly none for iron by parenteral methods.

MACROCYTIC ANEMIAS

The treatment of the macrocytic anemias, or those that are accompanied by megaloblastic bone marrow, is in a state of rapid change. Liver extract is now considered the treatment of choice for patients with *pernicious anemia* and there is little indication for the use of folic acid, except when liver extract causes severe reactions.

There seems to be general agreement that folic acid is of little service in arresting the neurologic changes of this disease.

On the other hand, oral folic acid appears to be the best treatment for the megaloblastic anemias that accompany sprue, pellagra, nutritional deficiencies, pregnancy, and infancy and for the syndrome known as achrestic anemia.

The discovery of vitamin B_{12} by Rickes and his associates and the clinical demonstration of its effectiveness by Randolph West may soon alter the treatment of the megaloblastic anemias. We agree with Castle that the outstanding hematologic contribution of the year has been the discovery of this vitamin.

There is already preliminary evidence that B_{12} is of considerable value in arresting the cord changes of pernicious anemia. If this is so and if folic acid is shown to be an effective hematopoietic agent, it seems likely that a combination of the two may prove the treatment of choice in pernicious anemia. For the present, how-

* Dean and Professor of Clinical Medicine, the Medical College of Alabama, Birmingham, Ala.

ever, the clinician should continue to use liver extract.

The treatment of *chronic leukemia* has changed very little from our basic dependence upon radiation. Radiation, however, as for other types of tumors, has proved to be relatively unsatisfactory, particularly when measured by methods used for the control of other diseases. New agents are appearing that promise better results. Among those in use with some degree of success is urethane or ethyl carbamate. This product seems to have a specific action especially with respect to prolongation of life for mice with leukemia.

In our hematologic clinic in Birmingham we have treated nearly 60 patients with urethane over a period of two years and have been highly gratified with the results. After administration of this drug there is a rather prompt fall of leukocytes to normal levels, disappearance of immature cells from the peripheral blood, and improvement in the bone marrow leukemic picture.

Patients have been maintained for many months in a state of satisfactory clinical remission by the use of urethane alone. This drug makes it possible to defer radiation until much later and thereby puts off the evil day when the patient may become radiation resistant. An occasional patient with chronic leukemia does not respond to urethane at all and the conventional methods of treatment must then be employed.

The outlook for the patient with *acute leukemia* seems to be better now than in the past. This improvement has been brought about by the contributions of Sidney Farber and his associates in the use of aminopterin.

During the past eight months we have given aminopterin to 28 patients with acute leukemia, 6 of whom were practically moribund on admission. We have recently reported our results with 22 who received the treatment for two weeks or longer. Of these 22 patients, 13 are dead and 9 living. Measured on a statistical basis, these results do not appear clinically satisfactory but 2 of the first 4 patients treated are still living and in a state of satisfactory clinical remission.

Aminopterin does not cure acute leukemia but, without doubt, it does prolong the lives of perhaps half the patients with this disease and gives new hope for the management of this hitherto entirely hopeless disease. It is my belief that those whose lives are being lengthened by aminopterin will ultimately succumb to the disease. Most of our patients have died because of hemorrhagic complications.

If some means could be devised whereby the thrombocytes could be elevated and hemorrhage controlled, the outlook for patients with acute leukemia would undoubtedly be much improved. Perhaps this may eventually be possible through the work of Allen and his associates.

The greatest hope for the future is that a stronger, more specific, and more powerful folic acid antagonist may be discovered than aminopterin. One of these in current use is amethopterin. We have not used this in our clinic, but I am advised by Skipper of the Southern Research Institute that it appears more effective than aminopterin in some of his experiments with mouse leukemia.

There seems to be little promise for

the control of the leukemic state by the radioactive isotopes. Although P_{32}, or radioactive phosphorus, has been found effective in polycythemia vera, it seems to be no more effective, perhaps less so, in chronic leukemia than the more conventional types of radiation. Plans are well under way now for the construction of a research hospital at Oak Ridge, Tenn., where extremely short-lived isotopes may be clinically applied in the treatment of leukemia and allied disorders. Perhaps from this work will be uncovered an agent more effective in the management of this disease.

The use of nitrogen mustard and similar compounds appears to offer some promise in the control of leukemia. The value of nitrogen mustard has been demonstrated in *Hodgkin's disease*, but it seems to have no advantages over other types of treatment for leukemia of either the chronic or acute type. Its effectiveness in Hodgkin's disease brings the expectation that similar compounds may be brought to light that will be even more effective, not only in Hodgkin's but in other lymphoblastomas.

Altogether, the use of such agents in treatment of leukemic disorders—agents such as urethane, aminopterin and other folic acid antagonists, radioactive isotopes, nitrogen mustard, and the like—comprises the opening of a new chapter in attempts to control these diseases. From the fact that some of them are effective in the various blood diseases, hope may be deduced for the discovery of newer, more effective agents.

It is encouraging that attention is now being centered on this class of compounds rather than on our older, classic method of radiation. In the past we have made the error of referring these therapeutic problems to the radiologist, thereby stultifying research progress in the management of these diseases.

HEMOLYTIC ANEMIAS

With respect to the bleeding diseases, no substantial progress has been made in the clinical therapy of the purpuric disorders. Recent work gives some promise of more effective control. Allen and his associates at the University of Chicago have demonstrated an increased heparin content in patients and animals with *thrombocytopenic purpura* and shown that this can be corrected by the administration of toluidine blue and protamine. Most of us used to think that the bleeding from thrombocytopenic purpura and the bleeding from coagulation defects were entirely separate and completely unrelated, but this does not seem to be true in view of the work just mentioned.

We have recently had occasion in our clinic to treat with toluidine blue and protamine 2 patients who apparently were suffering from *hyperheparinemia* of unknown cause. The results appear to be quite satisfactory. We have also used toluidine blue for a few of our patients with thrombocytopenic purpura but the results are not so clear cut and the use of such agents is questionable in these cases.

It has been demonstrated that plasma fraction 1 of Cohn is effective in the control of *hemophilia*. However, since the only satisfactory source of this fraction is fresh blood plasma, it remains generally unavailable for clinical use. Consequently, in the

management of hemophilia we continue to depend upon transfusions with whole blood and fresh plasma. The author believes that the use of transfusions by the direct method is superior to the use of blood to which an anticoagulant has been added.

Agranulocytosis has almost disappeared, but not entirely so. We see the condition rarely. It is now well recognized that the disease is caused by certain drugs, including aminopyrine, all the sulfonamides, thiouracil, propylthiouracil, gold salts, organic arsenical compounds, and perhaps atabrine, tridione, and mesantoin, the latter two being in current use for epilepsy. The administration of thiouracil has caused a substantial number of cases, but the less toxic propylthiouracil will also cause agranulocytosis. Bartels reports 10 cases of severe neutropenia in 670 patients receiving this drug at the Lahey Clinic.

Aside from the neutropenic states found in many of the primary blood diseases, most of our agranulocytosis cases result from the use of sulfonamides, propylthiouracil, organic arsenicals, and tridione. The disease is not the serious clinical problem that it once was because the mortality rate has considerably decreased through the widespread use of penicillin for the control of intercurrent and secondary infections. We have never seen substantial evidence to demonstrate the efficacy of pentnucleotide and other agents that have been recommended for the control of neutropenia.

BONE MARROW APLASIA

Some progress has been made in the treatment of *polycythemia vera*, the outstanding step being the demonstration that radioactive phosphorus is an effective agent in its control. Whether this method is more satisfactory than other types of treatment remains to be seen.

Certainly the patient with polycythemia vera can be kept in a state of satisfactory clinical remission over a period of years by the use of simple venesection alone. We are doubtful as to whether the use of radioactive isotopes, other types of radiation, or chemical agents such as acetylphenylhydrazine offer any advantages over a regime of repeated venesection.

Although the value of stilbamidine has not been completely demonstrated, it appears to be a useful agent in the control of *multiple myeloma*. Urethane also offers considerable promise in the treatment of this disease.

We have recently used large doses of urethane in 3 cases in our hematologic clinic with satisfactory results, particularly in the bone marrow picture. Whereas the marrow was literally crowded with approximately 50 to 90% of multiple myeloma cells in the beginning, these cells decreased to a relatively insignificant number after administration of urethane. Further experience is needed, however, before the usefulness of this drug can be evaluated.

THE GENERAL FIELD

Other basic research progress in the field of hematology includes a more general recognition of the role of the spleen in its destructive effects on blood cells. There has come to be general recognition of the syndrome generally referred to as *hypersplenism*

which results in a variety of cellular deficiencies in the blood. It is true that removal of the spleen will correct this syndrome in the occasional patient with lowered cell values, an enlarged spleen, and a normally functioning bone marrow. Hypersplenism results in a variety of clinical syndromes which may include severe anemia, neutropenia, thrombocytopenia, or combinations of these.

Progress in the field of blood transfusions has been greatly augmented by increased knowledge of the various types of Rh factor. The discovery of new factors and red cell antigenic agents has made it possible to give whole blood much more safely than heretofore and is constantly throwing new light on the causation of various hemolytic anemias.

Although continual progress is being made in the field of vitamins, the general field of hematology has not been affected to any considerable degree, with the exception of folic acid, ascorbic acid for the capillary fragility in *scurvy* and related diseases, and vitamin K in *hypoprothrombinemia.* So far as we can determine, vitamins A, B, D, B_2, nicotinic acid, pyridoxine, and pantothenic acid are not effective in the control of any of the hematologic syndromes.

The use of Bal in heavy metal poisoning has had clinical application in the field of hematology in the management of hematologic states caused by poisoning with gold or arsenic.

Considerable advance has been made in some of the technical methods in this field, centering largely around the study of bone marrow. Studies of the marrow have led to a better concept of the underlying processes of the hematologic states and have contributed to the control and management of many hematologic disorders.

Although from a pathologic standpoint much more information can be derived from biopsied specimens of marrow, the procedure is impractical in clinical hematology and we must be content to use aspirated material even with its shortcomings. The utilization of aspirated material of course has the major disadvantage that one is dealing with cytologic material without an organized pattern. Consequently, reliable interpretation and conclusions are much more difficult to make than if an architectural pattern were present.

GONORRHEA IS PREVENTABLE by means of a penicillin tablet of 250,000 units taken orally a few hours after exposure. Penicillin prophylaxis among naval personnel reduced the incidence of infection after shore leave from 11.9 to 0 per 1,000. Harry Eagle, M.D., of the National Institute of Health, and associates believe that peroral tablets are suitable for general use. The maximum length of time for which a single dose is effective is not known, but the average period between exposure and medication was less than two hours. Sensitization to the drug, penicillin-fast strains of gonococcus, and suppressed syphilitic infection were not seen.

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Progress in the Science of Nutrition

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THE science of nutrition has provided a powerful weapon for those who are working toward improvement in the social and economic fields and in public health, but the practical advances to date are small compared to the results that we may reasonably expect in the future.

Whether thinking in terms of human, animal, or bacterial nutrition, two working tools are necessary:

1] Identification of all the nutrients, with a special concern for those that are essential.

2] Methods of measurement whereby each nutrient, essential or unessential, can be followed quantitatively as it passes from one anatomic part of the body to another and from one enzyme to another inside each living cell.

Once these tools have been acquired, the scientist may be concerned with the interrelationships of all the nutrients as they function in the living organism. Then, finally, the goal of the study of nutrition is attainable—the use of food, whether natural or manufactured, for the promotion of health, enjoyment, and efficiency.

There is no doubt regarding the great contributions that have come from research within the past two years on new members of the vitamin B complex—*folic acid, vitamin* B_{12}, and *thymidine*. This group of nutrients was identified almost entirely on th basis of microbiologic assays. The final rapid advance resulted from research on the nutrient requirements of bacteria, rather than from a direct attack upon the problems of clinical anemia.

Of special value is the very great stimulus that these discoveries have given to the study of nucleic acid metabolism. The functional relationships between folic acid, vitamin B_{12}, and the fragments of nucleic acid now constitute one of the most intensive fields of exploratory research.

Another finding of particular interest is the identification of *cobalt* in the vitamin B_{12} molecule, thus providing the first indication of how cobalt may function in living cells. From a nutritional point of view, cobalt has been recognized for a number of years as an essential ingredient in the food supply of ruminants through an indirect contribution to the growth of bacteria in their intestinal tracts. The explanation apparently is not so simple, however, because the Cornell University group has reported that injections of vitamin B_{12}, by-passing the digestive tract, did not cure animals of cobalt deficiency.

One needs only to recognize that the organic materials controlled by the two new vitamins are dominant in the structure of genes and certain

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of the viruses to appreciate why biochemists are excited by these recent discoveries.

The structural relationship of the nuclear pyrimidines to alloxan, used in the production of experimental diabetes, affords another attractive basis for intensifying the study of nucleic acid metabolism. Perhaps more speculative, or at least less chemical, are the reasons to associate the compounds with carcinogenesis, but some of the associated ideas have already proved to be fruitful, as in the study of leukemia.

Copper has been recognized for many years as essential for the formation of hemoglobin and red cells, but there is still no chemical basis for explaining the immediate role of copper in the animal organism. The fact that copper has been identified as an essential part of several plant enzymes tempts one to postulate the formation of similar catalysts in animal tissue, but no progress has been reported in that direction.

The mineral element *molybdenum* has come into the nutritional picture with copper and iron in this area of research, since it exerts a reversible effect upon the copper requirement. These two elements play against each other in the normal production of hemoglobin. Thus far the studies are primarily concerned with cattle and farm crops, but the interplay between copper and molybdenum is real, even though chemists have no clear explanation of the result.

The studies of nutrition in relation to carcinogenesis at Yale University, the Memorial Hospital in New York, and the University of Wisconsin have shown the basic importance of *riboflavin* as a nutrient that can exert a significant degree of protection against carcinogenesis in specific strains of mice and rats.

The exact mechanism of the effect of riboflavin is still being investigated, but it is significant to note that this one nutrient, at a generous level, can protect certain strains of animals against carcinogenesis when they are fed toxic azo dyes. This year an unusually high riboflavin requirement was reported in the Yale strains of mice found to be highly susceptible to cancer.

Similarly, at the laboratories of the Alabama Institute of Technology, the rats found to be sensitive to carcinogenesis when subjected to *choline* deficiencies were found to have an abnormally high requirement for choline. These findings are still emphatically in the experimental animal stage of investigation, but they give a special impetus to studying the variations that may occur in the quantitative requirements of different individuals.

Choline has been recognized for many years as an essential nutrient for experimental animals, but there is very little direct evidence regarding the human requirement for choline or the role that choline may play in the protection of human health.

Dr. C. H. Best has recently called attention to the fact that, in laboratory animals, a deficiency of choline persisting through only a few days, followed by a full diet, results within a few months in a gradual onset of high blood pressure, enlargement of the heart, and the complex pathologic situation roughly characteristic of clinical arteriosclerosis and hypertension. These observations of Dr. Best appear

to provide a most valuable experimental approach to the study of related clinical problems.

Deposition of *cholesterol* in the arteries is frequently associated with arteriosclerosis, but one finds too little recognition of the evidence that cholesterol is formed largely from acetate groups, rather than from sterols consumed in food. Hence it is tied up with the intermediate steps by which carbohydrates and fats are used, perhaps more than with sterols consumed. *Vitamin B_6* has been established quite clearly as having an essential role in the metabolism of amino acids, with special reference to *glutamic acid* and its role in transamination. However, persistent reports that glutamic acid could play a role in improving the mental performance of experimental animals have not been varified.

This does not imply any reservation, however, concerning the role that glutamic acid plays in intermediate metabolism.

Dr. Sognnaes and Dr. Shaw have shown in well-controlled experiments with laboratory animals that a good diet supplied to the mother during gestation and lactation affords a significant degree of protection against dental caries in the offspring. These findings do not seem to be dependent upon fluoride intake, but instead reflect a marked gain in the resistance of teeth to decay. This resistance is the result of good nutrition during the early development of tooth structure.

Dr. Sognnaes' report has immediate interest at the clinical level in view of the observations of Dr. Toverud in Norway and other parts of western Europe pointing toward a similar relationship in human maternal and infant feeding. The gains were more significant than have been observed for either topical application or internal provision of fluorides.

In studies of *fat metabolism*, remarkable progress has been made within the last few years. The findings of Dr. A. L. Lehninger at the University of Chicago, Dr. H. A. Lardy at the University of Wisconsin, and Dr. E. H. Stotz at the University of Rochester have greatly enlarged the picture of how fats are built up and broken down in the animal body. Out of these studies of specific catalysts and step-by-step reactions should come not only a new and very important chapter in the field of intermediate metabolism but also a more complete understanding of the metabolic faults that underlie such degenerative diseases as diabetes, arteriosclerosis, and cancer.

Much misleading information has reached the public in regard to the natural protection afforded experimental animals and people by their normal appetite response in the selection of foods. In a practical sense, it has long been evident that neither children nor adults are adequately protected by intuition or appetite in their selection of foods. Hence the importance of the demonstration by Dr. E. M. Scott and his associates that even experimental animals do not have an adequate protective mechanism in their appetite for needed food. Many animals with a free choice of good quality protein or of magnesium salts in their feeding cups ate so little of these essential nutrients that they lost weight and finally collapsed and died from their deficiencies.

Advances in the Field of Arthritis

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RHEUMATOID arthritis is very difficult to diagnose. The course of the disease is not well defined. Remissions and exacerbations occur and often the last medication given before a remission is credited with cure.

Pathology is nonspecific, simply an overgrowth of connective tissue, although some evidence indicates that the nidus of the pathology is in the ground substance—the intercellular, fibrillar material. Pathogenesis is unknown and all treatment must be empirical. Everything that one can think of has been tried.

Only two medications have stood the test of time. One is gold, the other is salicylates. The effectiveness of the gold compounds is still a matter of controversy. The salicylates do not bring about complete remission of symptoms, but are palliative.

GOLD

Gold does not effect a cure but does temporarily diminish the activity of the disease. Only about 30% of the patients who do not improve with conservative measures are helped by gold. With gold, however, improvement may take place in a period of one, two, or three months instead of the year or two required under conservative management. The time relationship is important, even though the actual statistical importance of chrysotherapy is not so apparent.

Improvement obtained with gold is not permanent. Sooner or later almost every patient relapses. Relapse may not occur for five years but, with few exceptions, is inevitable unless a maintenance dose schedule is continued indefinitely. There is no arbitrary limit to continuance, but toxicity may develop.

The mechanism of the action of gold is completely unknown. To be effective the gold has to be in monovalent form, linked by a sulfhydryl radical with its organic compound. This linkage is presumably necessary to make the metal soluble at a neutral *p*H, since gold chloride and such simple gold compounds are very acid.

Toxicity is a real danger. Tobias, working with radioactive gold, found it deposited in the ground substance of the connective tissue. Gold is excreted slowly and small amounts can be detected ten months after the last dose. Between 20 to 40% of the patients show some evidence of toxicity.

Treatment of gold toxicity with British anti-lewisite (Bal) has been satisfactory. The danger of lethal reactions from gold with the use of British anti-lewisite is minimal. However, unpleasant reactions, especially exfoliative dermatitis, may necessitate hospitalization.

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Other compounds, such as bismuth, arsenic, and organic copper, have been used for the treatment of rheumatoid arthritis, but results have not been definitive.

SALICYLATES

Since 1875 salicylates have been used as antirheumatic drugs. An antirheumatic drug depresses the amount of activity of the rheumatic process in the sense that it causes a cessation of joint pains, surface swelling, and redness.

There are many different hypotheses to explain the pathogenesis of rheumatic fever or the rheumatic diseases. A current one is that rheumatic fever, in its joint manifestations at least, involves the ground substance of the connective tissue, that there is some relation between hyaluronic acid and chondroitin sulfuric acid, or between hyaluronidase enzymes and rheumatic fever.

The hyaluronidase enzyme is found widely in bacteria and also in the mammalian testis, and there is some evidence, quite indirect, that there is a defect in this enzyme system in the rheumatic state.

Salicylates in vitro do not inhibit the hyaluronidase enzyme at all, except in concentrations high enough to denature or inhibit a biologically active protein. However, Guerra, at the University of Mexico, found that the ingestion of salicylates would inhibit the spreading action of hyaluronidase.

The more one investigates the metabolism of salicylates, the more one is impressed by the many ways in which it might possibly interfere with the metabolism of the connective tissue. Some is conjugated with glucuronic acid, which is a component of both hyaluronic acid and chondroitin sulfuric acid. Some is conjugated with glycine, which is an amino acid found in high concentration in the proteins of connective tissue.

There is some evidence that salicylates interfere with the water-binding power of these mucopolysaccharides in the connective tissue.

GENTISIC ACID

And lastly, working with Dr. Karl Meyer, we have found that the metabolic product of salicylate ingestion, namely, gentisic acid, if allowed to age, is an active in vitro inhibitor of hyaluronidase.

If pure crystalline gentisic acid ages in an alkaline solution, it turns brown. Presumably this is the result of the formation of the quinone, benzoquinone carboxylic acid. Somewhere in between the hydroquinone and the quinone is the active inhibitor of hyaluronidase. This inhibits in high concentrations which may be found physiologically present in the human body.

We have investigated gentisic acid for its antirheumatic potential and find that it is an active antirheumatic drug. Its actions in this respect are similar to those of the salicylates, but since it is excreted rapidly, it must be administered at very frequent intervals.

Gastric irritation is much less apt to occur with gentisic acid than with the salicylates. A patient unable to tolerate salicylates because of gastric irritation will be able to tolerate therapeutic amounts of gentisic acid. We have seen no tinnitus develop and

no evidence of salicylism with doses up to 24 gm. of sodium gentisate a day.

Because of its rapid excretion, the drug is not the ideal antirheumatic medication, and further studies are now in progress to develop a drug which will be excreted more slowly and will have the advantages of gentisic acid.

We are also screening preparations to determine if in vitro inhibition of hyaluronidase is correlated with antirheumatic activity.

Juvenile Rheumatoid Arthritis

L. Maxwell Lockie, M.D., and Bernard M. Norcross, M.D.*

Pessimistic prognosis for rheumatoid arthritis in children is not warranted. Severe deformity is an infrequent rather than usual result, in the experience of L. Maxwell Lockie, M.D., and Bernard M. Norcross, M.D., of the University of Buffalo School of Medicine, Buffalo, N.Y.

Rheumatoid arthritis occasionally occurs as early as the first year of life. Immediate causes are respiratory infection, especially with hemolytic streptococci, and injury to a joint. Girls are more susceptible to the disease than are boys.

Among 28 children with rheumatoid arthritis, knees were involved in all cases and frequently the hands, wrists, ankles, and elbows. Anemia and weight loss occurred in over half the cases, fever almost as often.

Lymph nodes, spleen, and liver were enlarged in 5, 4, and 3 instances, respectively. The heart was affected in 2 cases only, growth of bone in 4; 2 of the group were severely crippled and 2 died. Nearly two-thirds regained complete health or recovered with slight residual disturbances.

Complete rest in bed is essential until all rheumatic activity subsides. Early use of gold salts or foreign protein is advisable. Helpful treatment includes infrared and roentgen irradiation, gentle massage of muscles, and small weekly transfusions. Removable plaster splints alleviate muscle spasm.

Pain is relieved by salicylates; opium should not be given in any form. Graduated exercises are permitted, but never to the degree of producing pain.

* Juvenile rheumatoid arthritis. Pediatrics 2:694-698, 1948.

Polymyxin, Chloromycetin, and Aureomycin

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DURING the past twenty-four months three new antibiotic agents, polymyxin, chloromycetin, and aureomycin, have been described. Although polymyxin (aerosporin) is an effective antibiotic against several severe infections, its toxicity precludes its general use. Neither chloromycetin nor aureomycin has shown significant signs of toxicity.

Chloromycetin has been demonstrated to be valuable in the therapy of rickettsial diseases and typhoid fever. It will undoubtedly prove useful in treatment of other infections produced by certain gram-negative microorganisms and viral agents.

Aureomycin is an active antibiotic agent against rickettsial diseases, primary atypical pneumonia, acute brucellosis, staphylococcal infections, urinary tract infections produced by *Escherichia coli, Aerobacter aerogenes*, and *Streptococcus fecalis*, certain eye infections, pneumococcal and streptococcal infections, and certain viral infections. Its clinical use in extrapulmonary tuberculosis is in the highly experimental stage. It is not recommended in typhoid fever and seems to be ineffective in whooping cough.

BACTERICIDAL AND BACTERIOSTATIC ACTIVITY

From the point of view of antibacterial activity, polymyxin in vitro is definitely more effective than streptomycin against certain gram-negative bacteria, having from 2 to 80 times the activity of streptomycin against susceptible bacteria. The activity of polymyxin is primarily bactericidal in the concentrations used, while that of streptomycin is bacteriostatic. Moreover, we have been unable to produce resistant organisms by exposure to polymyxin over long periods of time.

Chloromycetin and aureomycin exert bacteriostatic effects on certain gram-positive and gram-negative bacteria in vitro. In testing these effects, the comparison for gram-positive organisms was made with penicillin; for gram-negative organisms, with streptomycin. Under the conditions of the tests, aureomycin was found to be from 4 to 16 times as active as chloromycetin against streptococci, pneumococci, and staphylococci, and from 1/10 to 1/80 as effective as penicillin except against the streptococci belonging to Group D in Lancefield's classification.

When gram-negative organisms were tested, the bacteriostatic activities of aureomycin and chloromycetin were comparable but generally less than the antibacterial activity of polymyxin.

Exceptions are the relative effectiveness of chloromycetin against strains of *Proteus vulgaris* and the almost total lack of activity of chloromycetin and aureomycin against strains of *Pseudomonas aeruginosa*. Aureomy-

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cin has also been tested against five strains of organisms belonging to the *Brucella* group and has been an effective bacteriostatic agent in concentrations of 0.75 micrograms per milliliter or less.

Other investigators have reported that polymyxin has an antibacterial effect against *A. aerogenes, Eberthella typhosa, Esch. coli, Klebsiella pneumoniae, P. multocida, Shigella gallinarum, Salmonella pullorum,* and *S. of Flexner;* and that chloromycetin has a bacteriostatic action against *S. schottmülleri, S. paradysenteriae* (Sonne), *Bacillus mycoides, Borrelia recurrentis, Brucella abortus, Br. suis, Br. melitensis, E. typhosa, Hemophilus pertussis, Pasteurella tularensis,* certain strains of *Mycobacterium tuberculosis hominis,* and certain yeasts and filamentous fungi.

PHARMACOLOGY

When polymyxin was administered to human beings intramuscularly in divided doses at intervals of three hours in amounts not to exceed a total daily dosage of 3 mg. per kilogram of body weight, concentrations of 0.6 to 1.3 micrograms of the antibiotic per milliliter were noted in the serum after twenty-four hours of therapy. Detectable amounts of the antibiotic were present in the urine of these patients. To date, polymyxin has not been found in the spinal fluid of patients with purulent meningitis treated with this antibiotic.

Chloromycetin appears promptly in the blood after a single oral dose or intramuscular injection. It apparently is excreted fairly rapidly in the urine, from which its recovery, as measured by biologic tests, is fairly high. In patients with typhoid fever treated by initial daily doses of between 4 and 5 gm. of chloromycetin, concentrations of from 40 to 80 micrograms were noted in the blood within the first twenty-four hours of treatment. Concentration of chloromycetin in the spinal fluid was approximately half that noted in the blood.

Aureomycin deteriorates quite rapidly when placed in solution. It is bound by the proteins of blood serum in varying degrees. When administered to human beings in doses of 500 mg. twice a day orally and 40 mg. every six hours by injection, concentrations of from 0.6 to 2.4 micrograms per milliliter of aureomycin were observed in the serum one hour after the injection. Concentrations of from 50 to 80 micrograms per milliliter were observed in the urine, which was discolored a greenish yellow.

TREATMENT OF INFECTIONS

It is indeed unfortunate that the toxicity of the various specimens of polymyxin tested to date is such as to preclude the general use of this antibiotic. For there can be no doubting the therapeutic effectiveness of polymyxin for the treatment of local and systemic infections produced in human beings by certain gram-negative bacilli.

Outstanding among the infections which have responded to treatment with this antibiotic are those due to *Ps. aeruginosa, K. pneumoniae, H. pertussis, H. influenzae* type B, and *Esch. coli.* In severe instances of such infections treated by the intramuscular injection of polymyxin at three-hour intervals, the results frequently have been very satisfactory.

In these patients the total daily dose of polymyxin has been based upon 3 to 5 mg. of the antibiotic per kilogram of body weight, this being split into eight equal doses and given in a special buffer solution (*p*H 7.4) at intervals of three hours.

Payne and associates have reported that chloromycetin in doses of 10 mg. per kilogram of body weight per day given by the intravenous route, or 15 mg. per kilogram of body weight per day given by the oral route for three days is effective against severe epidemic typhus fever.

Smadel *et al.* have described the treatment of scrub typhus with chloromycetin. In 25 patients suffering from this disease, the administration of this antibiotic in varying doses brought about a prompt cure. Doses as small as 6.0 gm. of chloromycetin given for one day produced satisfactory responses.

Pincoffs and associates have tested the effects of chloromycetin on 15 patients with Rocky Mountain spotted fever, Eastern variety. Here again, excellent results were obtained in all cases.

Finally, Woodward, Smadel, Ley, Green, and Manikas found that chloromycetin exerted a specific therapeutic effect in 10 patients ill with early typhoid fever, all of whom had blood cultures positive for *E. typhosa* before treatment was started. Administration was by mouth in initial doses of 50 mg. pe kilogram and continuing doses of 0.25 gm. every two hours until the temperature was normal. Then the same dose was repeated every three or four hours for the next five days. The average time in which the temperature returned to normal in these 10 patients was found to be three and one-half days.

Recently, Braley and Sanders have described the effectiveness of aureomycin antibiotic against certain bacterial and viral infections of the eye. Wright and coworkers have demonstrated that aureomycin has a therapeutic effect in lymphogranuloma venereum and granuloma inguinale. Finland *et al.* have found that the antibiotic appears to have a beneficial effect in coccal infections and in certain infections of the urinary tract.

Sixteen cases of Rocky Mountain spotted fever, the Eastern variety, of which 13 were proven by serologic methods, have been treated with aureomycin by our group. The results were excellent. The average time of treatment in these patients was 4.5 days, hospitalization, 8 days. The temperature returned to normal in an average of 2.3 days. There were no complications.

A patient severely ill with Brill's disease has been treated with prompt and excellent results, as has one with Q fever.

Thirteen patients, who had the diagnosis of primary atypical pneumonia confirmed by all available methods, have been treated with aureomycin with excellent results. In 9 the temperature was normal in twenty-four hours, in 2 within forty-eight hours, while in one patient seventy-two hours passed before this desirable state was reached. All experienced prompt symptomatic relief and the pneumonic processes in their lungs cleared rapidly after treatment was initiated.

Five patients ill with acute or subacute brucellosis, in all of whom positive blood cultures were obtained,

have been treated with aureomycin. In 3 cases the infection was due to *Br. suis;* in the others, *Br. abortus* was recovered from the blood. All had typical symptoms of the disease and enlarged spleens. The titer of antibody for their specific strain of the *Brucella* group was high in the serum of all patients. One had failed to be cured by previous treatment with sulfadiazine, streptomycin and sulfadiazine, and polymyxin, while another had had an ineffectual course of streptomycin and sulfadiazine.

In all 5 patients there was a dramatic clinical response to aureomycin, with the temperature falling to normal within seventy-two hours and a progressive remission of all symptoms and signs. Treatment was carried out over a fourteen-day period. These patients have been observed from two to six months. All have gained weight consistently, and none has shown any symptoms or signs of recurrence.

Five patients suffering from various forms of tuberculosis have been treated. In 2 who had tuberculous meningitis, the antibiotic did not prove to be effective. In a twelve-year-old Negro child who had three scrofulous sinuses in her neck, from each of which tubercle bacilli were recovered in culture, the administration of aureomycin for one month resulted in the closure of all sinuses a week after treatment had been started. Three months afterward there had been no recurrence.

The fourth patient was suffering from advanced tuberculosis of the renal tract with marked involvement of the bladder. One kidney had been removed because of the infection. This man has been under treatment for two months and has experienced a marked remission of the symptoms and signs of his disease. He is still under treatment and his progress will be reported subsequently.

A fifth patient ill with cavitating tuberculosis was treated for two weeks with aureomycin without evidence of clinical improvement. It must be made clear that no claims are being made yet for the therapeutic use of aureomycin in tuberculosis. We are merely reporting our observations.

Five patients with typhoid fever have been treated with aureomycin. Results were equivocal. Chloromycetin would appear to be definitely superior to aureomycin for the treatment of this disease.

Eight patients suffering from serious and complicated infections of the urinary tract were treated with aureomycin. The infecting organisms were *Esch. coli, A. aerogenes, Str. fecalis,* or a mixture of two or more of these microorganisms. All 8 patients had received sulfonamides, penicillin, or streptomycin previously.

The immediate effects from aureomycin therapy were good in 7 and fair in 1 of these patients. It remains to be seen what the long-time results will be.

Aureomycin is ineffective in the urinary tract infections in which *Ps. aeruginosa* or *P. vulgaris* is the etiologic agent.

Eight patients with moderate to severe infections produced by *Staph. aureus hemolyticus,* in 2 of whom a staphylococcal bacteremia was present, have been treated with aureomycin.

In several of these patients antecedent therapy with sulfadiazine and penicillin had been unsuccessful. In

7 of the 8 patients prompt and satisfactory responses to therapy were noted.

In the eighth, an infant whose initial infection was a staphylococcal pyoderma, extensive signs of pulmonary involvement were present despite continuous therapy with penicillin for a period of more than two months. When treatment with aureomycin was initiated, the pulmonary signs cleared rapidly except for one small area. After two weeks of therapy with aureomycin, material for culture was obtained from this area by bronchoscopic examination, and a strain of *Staph. aureus hemolyticus* which was resistant to more than 10 micrograms of aureomycin per milliliter was isolated. This patient must be counted as a failure.

When a new antibiotic is being tested clinically, a number of patients with curious infections for which there is no experimental evidence for the use of the antibiotic must be treated if only to maintain harmony in the society of physicians. Certain of these patients whom we will place in the category of "miscellaneous infections" will be discussed. Among the patients in this group for whom there was experimental evidence attesting to the possible value of aureomycin in the treatment of clinical disease were the following:

► One patient ill with meningitis produced by *Str. fecalis* was promptly cured by the administration of aureomycin.

► One patient ill with pneumococcal meningitis produced by *Diplococcus pneumoniae* type 6 had been treated with sulfadiazine, penicillin, and streptomycin with the result that the infecting organism had become resistant to all three agents. Cultures of the spinal fluid were abundantly positive for *D. pneumoniae* before therapy with aureomycin was initiated. Recovery was prompt after this antibiotic had been administered.

► One patient suffering from subacute bacterial endocarditis due to *Str. fecalis* had been treated with crystalline penicillin G with very satisfactory results until fever, hives, and arthritic symptoms and signs developed as a toxic reaction to penicillin therapy. Penicillin was discontinued and the blood culture became positive again for *Str. fecalis.* Aureomycin was instituted in doses of 1.8 to 3.2 gm. per day and continued for eleven weeks. While final judgment cannot be passed, it can be said that the initial results of therapy were excellent and that so far there has not been a recrudescence of the disease.

► Two patients who had brain abscesses, one due to *Staph. aureus hemolyticus* and the other to *Esch. coli,* have been treated with satisfactory results.

► Two patients ill with peritonitis, in one of whom the infection was produced by *Esch. coli* and *Str. fecalis,* in the other by *Str. fecalis,* have been successfully treated with aureomycin as an adjunct to surgery. In both instances the response to therapy was prompt.

► Two patients ill with whooping cough did not respond to treatment with aureomycin.

► One patient each with polioencephalitis, noma, erythema multiforme, and pancreatic necrosis with secondary infection has been treated without results.

AUREOMYCIN DOSAGE

To date, the mouth is the route of choice for administering aureomycin. A satisfactory preparation for general intravenous use has not been developed. The antibiotic is supplied as a hydrochloride salt, the acidity of which causes pain when administered intramuscularly.

It is too early in the history of aureomycin to establish accurate dosage schedules. Probably the schedules recommended now will later be proven excessive. However, they have been effective. In severely ill patients who are being treated orally, the total daily dose of aureomycin should be based on 60 mg. per kilogram of body weight per day.

Initial "priming" doses equivalent to one-sixth of the total daily dose should be given to seriously ill patients at hourly intervals for three doses. Then one-sixth of the estimated dose should be given at four-hour intervals until the temperature has been normal for twenty-four hours. At this time the basis for the total daily dose should be reduced by one-half or to 30 mg. per kilogram of body weight. This is divided into four parts and is given at six-hour intervals until the infection is eliminated.

In moderately severe infections the total daily dose should be based on 30 mg. per kilogram of body weight, divided into four or six equal parts and given at four- or six-hour intervals until the infection is under control.

CLINICAL TOXICITY

Polymyxin, being a polypeptide or a mixture of polypeptides, should not produce toxic reactions as the result of the sensitization of the patient to the antibiotic. To date this has been true as far as our experience has gone. Histamine-like reactions, hypesthesias, and fever have been noted in the course of polymyxin therapy, but these reactions are apparently due to impurities in the drugs being used, rather than to the antibiotic itself.

All specimens of polymyxin that we have tested have produced varying degrees of renal tubular dysfunction. In the mildest form the dysfunction appears as a fixation of the specific gravity of the urine, while in severe forms oliguria with albumin, casts, red blood cells and white cells in the urine, an elevated nonprotein nitrogen, and depressed renal function may occur. These latter reactions sometimes become very disturbing and it is because of them that the general use of polymyxin seems contraindicated.

Neither aureomycin nor chloromycetin, although each is a derivative of the family of *Streptomyces,* has shown significant evidence of clinical toxicity so far. Some nausea has been reported by patients receiving aureomycin, but this can be easily controlled by administration of preparations which contain aluminum hydroxide. Occasionally, a looseness of the bowels is associated with the employment of aureomycin therapy.

Dermatologic Disorders

HOWARD T. BEHRMAN, M.D.*
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DURING the past few years many skin diseases once classified as incurable or extremely recalcitrant have yielded to new drugs or to modifications of old remedies. The therapeutic agents available in dermatology are still exceedingly few. There is a great need for research to develop new agents and determine the cause of dermatologic disturbances.

ANTIHISTAMINES

Among the most important of the drugs taken internally for external disease are the antihistamines. In allergic conditions histamine is produced and acts upon the cells that are sensitive to it. Administration of an antihistamine interferes by biologic competition with the action of histamine and nullifies its effect.

The antihistamines are effective primarily for acute and, to a lesser extent, chronic urticaria. Their effect is unrelated to the cause of the disorder and is equally valuable for the urticaria due to foods, such as shellfish and strawberries, and for the frequent eruptions due to drugs, especially penicillin. To a less degree the antihistamines are useful for various physical allergies and forms of pruritus.

Although we have many effective antihistamines, there is still need for improved products, especially for drugs with increased antihistaminic properties but that cause fewer adverse side effects.

In response to injury, the tissue, especially that of the skin, liberates other substances besides histamine. One of these is hyaluronidase, an enzyme which hydrolyzes hyaluronic acid. Spread of materials within the skin is facilitated so that protein penetrates the tissue, and bacteria toxins and dyes penetrate much faster.

Many allergic manifestations not responsive to the antihistamines are probably due partly to a hyaluronidase type of reaction. In dermatitis caused by poison ivy, for which antihistamines are only slightly effective, it may be that histamine is liberated minimally and hyaluronidase maximally.

BAL

One of the remarkable discoveries of the war period is 2,3-dimercaptopropanal or Bal, one of the most effective and least toxic of the simple dithiol compounds, which have a great selective affinity for arsenic. When Bal is administered after arsenic poisoning the arsenic is detoxified and excreted, provided toxicity is not too long established.

The compound is of great value in the treatment of hitherto extremely resistant cases of exfoliative dermatitis and other extensive cutaneous eruptions and systemic disturbances

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due to poisoning from arsenic, mercury, bismuth, and gold.

Basic research may disclose other safer and more effective mercaptans.

NITROGEN MUSTARDS

The treatment of mycosis fungoides has been advanced by the use of the β-chloroethyl amines, the nitrogen mustards. The effects, unfortunately, are usually only temporary.

ANTIMONY AND BISMUTH

Of greater value than the nitrogen mustards for radioresistant cases of mycosis fungoides are the antimony preparations, such as tartar emetic and a newer and less toxic pentavalent antimonial.

An orally administered form of bismuth, sodium bismuth triglycollamate, is of some use in the discoid type of lupus erythematosus but its reputed efficacy in lichen planus and similar diseases has not been proved.

VITAMINS

The brilliant dermatologic progress reported in the field of vitamin research requires critical evaluation. Experiments successful on animal skin must be tried on human beings with caution, not only because of the differences in utilization but because human skin differs so profoundly from animal skin in structure and function.

At present, however, certain conclusions can be drawn. In various subclinical states of vitamin deficiency, vitamins may be the essential means of providing both a diagnostic and curative agent.

Vitamin A is probably of value to increase skin and mucous membrane resistance to infection and lessen keratinizing metaplasia. It may be tried for acne with severe comedo formation, Darier's disease, and other skin disorders that are characterized by follicular hyperkeratosis. It is more effectively absorbed in aqueous than in oily solutions.

Marrack states that, within limits, the concentration of vitamin A in the plasma seems to be characteristic of the individual and little affected by intake. A group of nurses took 50,000 I. U. of vitamin A daily for two years, yet Robertson and Morgan found no higher concentration in their plasma than in the plasma of a control group who received no supplements to their regular diet.

Components of the *vitamin B* complex have a limited value in skin disease. The pantothenates and para-aminobenzoic acid may influence graying of the hair in rats but do not prevent or lessen graying of human hair, probably because these vitamins are never chronically depleted in human beings. If gray hair should appear because of vitamin lack, a very remote possibility, administration of the vitamins would prove as effective in the human as in the rat.

Niacin cures pellagra and like conditions; riboflavin improves certain cases of scaling lips and angular stomatitis; and sodium para-aminobenzoic acid may be of value in cases of lupus erythematosus. The entire B complex may be beneficial in resistant cases of nummular and eczematous dermatitis.

Calciferol or *vitamin* D_2 is promising in the treatment of tuberculosis of the skin, especially in early stages. Calciferol produces an acute vascular and leukocytic reaction in lupus tissue with the liberation of tuberculotoxin

followed by fibrosis and diminution of the local blood supply. Urinary and blood calcium levels must be carefully checked during administration.

Vitamin E is reported to cause specific improvement in all types of lupus erythematosus. The vitamin probably affects sebaceous gland activity inasmuch as increased sebaceous secretion is shown under treatment by the appearance of comedones and greasy scales.

Benefit has also been observed with use of vitamin E in sclerosis of the legs associated with ulcers and, to a lesser degree, in scleroderma and dermatomyositis.

HORMONES

Of increasing importance is the role of the steroid hormones in skin diseases. Our present knowledge has been summarized by Barber as follows:

¶Androgens stimulate the surface epithelium and the sebaceous glands, tending to produce hyperkeratosis and seborrhea.

¶Estrogens have a contrary action in that they diminish keratinization and the activity of the sebaceous glands.

The entire problem of growth and distribution of coarse hair, of seborrhea and, indirectly, of acne vulgaris and dandruff rests basically on these two facts. The comedones of acne probably result from the stimulation to keratinization exerted by androgen, most of which is derived from the gonads in males and from the adrenal glands in females. The excretion of 17-ketosteroids rises in girls at the time of puberty, indicating the increased adrenal activity that accompanies that of the ovaries.

The hormonal control of the growth of pubic and axillary hair in females is not primarily dependent upon ovarian function but upon an androgenic hormone derived from the adrenal cortex. Coarse hair on the face, trunk, and limbs results from stimulation of hair follicles by androgen. Hair follicles on the vertex and temperofrontal region of the scalp are exceptional in that their growth is stimulated by estrogens and inhibited by androgens. Hence the occurrence of baldness in many men and in some females with ovarian insufficiency and at the climacteric.

These basic facts are specific and stimulating, but indiscriminate endocrine therapy is fraught with danger. The aforementioned facts are of value for therapy only in the exceptional case of acne or alopecia.

PROTEINS

Proteins have been employed in various skin diseases and are of some importance. Their value is primarily due to the fact that they contain 8 to 10 so-called essential amino acids, especially cystine and methionine. Skin and hair are rich in cystine. Methionine is a precursor of cystine when cystine is in low supply.

It is obvious, therefore, that in conditions in which there is much loss of the superficial layers of the skin, rebuilding requires a diet rich in sulfur-containing amino acids. Conversely, a lack of these amino acids in the diet may result in a breakdown of the skin and of hair growth.

Marrack observed that excessive formation of skin keratin may require more cystine than is supplied in food. Peters found that the scales shed by a

man suffering from exfoliative dermatitis contained only 3% of cystine. The patient was cured following administration of cystine. Similar cases (Goldsmith) have recently been observed and specific amino acids appear to be of value in exfoliative dermatitis, scleroderma, dermatomyositis, pemphigus, and infantile eczema (Wolpe).

ANTIBIOTICS

Chemotherapy and the antibiotics have a limited sphere in treatment of skin disease. The sulfonamides are used primarily in chancroid and dermatitis herpetiformis. Penicillin is of exceptional value in syphilis and in such infections as carbuncles and erysipelas. Streptomycin is effective in granuloma inguinale; bacitracin in the local treatment of surgical infections; and aureomycin in lymphogranuloma venereum.

The external application of these remedies is generally not advised as a protective measure. Superficial skin diseases should not be treated with antibiotic drugs which are apt to be used systemically for serious illness, unless the effects are significantly superior. The development of hypersensitivity to these agents because of their injudicious use for some minor illness or trivial skin disease might preclude a later systemic administration when life or death hangs in the balance.

At the present time the prime objective of chemotherapy appears to be the production of antibiotics with higher and higher antibiotic activity. Dermatologic researchers should also consider the production of antibiotics with lower and lower sensitizing properties. The recent development of dihydrostreptomycin hydrochloride is a step in this direction.

DRUGS FOR ANIMAL PARASITES

The destruction of animal parasites on the surface of the skin is no longer a serious problem since the development of DDT and other similar agents. Most of the compounds in such use today contain chlorine.

Possibly other halogens might be used, such as bromine and iodine. One of these new agents is the gamma isomer of hexachlorocyclohexane, which should be labeled HCH to follow the present trend of abbreviation. This substance has been reported to be practically 100% effective in the treatment of scabies and all surface animal parasitic diseases, such as pediculosis. It is said not to cause any disagreeable side effects or dermatitis.

Combinations of DDT, benzyl benzoate, and various wetting agents have also been found efficient but may produce dermatitis because of allergic hypersensitivity to one of the ingredients.

DRUGS FOR VEGETABLE PARASITES

The vegetable parasites causing the superficial fungous infections of the skin have been subjected to a veritable barrage of new therapeutic weapons. Most prominent are the aliphatic unsaturated fatty acids in human sweat which are responsible for its fungicidal activity. These unsaturates include propionic, caprylic, and undecylenic acid and their salts.

While these substances are fungistatic and fungicidal to a certain extent, they are by no means a cure-all for fungous infection nor are they as effective in specific instances as some

of the older remedies. Their great value lies in their low sensitizing and irritating potential so that they can be used prophylactically and therapeutically without aggravating the cutaneous disease. It should be emphasized, however, that these agents have only a low therapeutic index.

Recent studies have brought to light a more promising group of drugs which appear to be superior in fungistatic and fungicidal action to the aliphatic unsaturated fatty acids. This group is composed of various quinone and dithiocarbamate derivatives. The dithiocarbamates are superior in respect to toxicity and fungistatic activity; they are not inactivated in the presence of blood, as are the naphthoquinones, and they are also bacteriostatic. Other new fungicides of value are copper salts of the above and salicylanilide, both of which are particularly valuable in resistant cases of ringworm of the scalp.

REMEDY FOR VENEREAL WARTS

Another good local remedy is podophyllin which has been used for many years as a vermicide, cathartic, and escharotic. Applied topically it cures condyloma acuminata or venereal warts. Podophyllin is effective when dissolved in alcohol or suspended in oil. The cell change produced by this drug suggests inhibition and arrest of mitosis, indicating the possibility of parallelism in the study of cancer.

The drug is of little value in the treatment of ordinary verrucae although it is of occasional merit in resistant types of subungual and plantar warts.

POISON-IVY THERAPY

Ivy poisoning is still a major health problem. Prevention or early treatment by prolonged washing with soap or by the application of chemical agents such as a 10% sodium perborate cream is effective only if measures are applied within a few minutes after contact. They are of no value therapeutically.

Desensitization procedures are still far from satisfactory. The oral administration of ivy extract over a two-month period can produce temporary desensitization with large doses but is apt to produce skin eruptions and gastrointestinal reactions, especially pruritus ani. The average patient probably would prefer the disease itself to a severe bout of anal itching.

This narrows the outlook down to either avoidance of the plant, or its environmental control by means of two new chemical herbicides (ammonium sulfamate and dichlorophenoxyacetic acid) and, finally, to merely local measures to control the eruption and its subjective symptomatology.

The active agent in poison-ivy dermatitis is toxicodendrol. Lead salts cause this chemical to precipitate; it oxidizes slowly in the air, becoming an inert substance. The field is wide open for research to find a substance that will combine chemically with this active material.

New Knowledge of High Blood Pressure

KEITH S. GRIMSON, M.D.*
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RESEARCH during the last twenty years has made slow but steady progress toward discovery of causes of high blood pressure in man, and a little progress toward development of effective methods of treatment.

Most patients with elevation of blood pressure have increased resistance to flow of blood through the countless fine blood vessels distributed everywhere in the body. Apparently the amount of blood pumped from the heart is not increased; neither is the viscosity of the blood, nor the total volume.

Information has come from basic research concerning mechanisms which might cause constriction of small blood vessels and thus increase the pressure.

Microscopic studies of vessels obtained surgically in early stages of hypertension usually indicate that thickening or hardening has not occurred. Sclerosis evidently develops late, presumably as a result of the hypertension. Many metabolic studies are being directed toward dietary measures to prevent vascular change.

Overwork, worry, anxiety, and similar tension states may cause vasoconstriction, increasing resistance and elevating blood pressure.

Rest and sedatives are now occasionally supplemented in treatment of hypertension by operations on the sympathetic nervous system. Work is being done with new drugs in an effort to duplicate operative results.

Extensive studies have revealed that an enzyme system may, under conditions causing anoxemia of the kidney, liberate a substance into the blood stream which produces a constriction of the small vessels. Substances capable of neutralizing this process are being sought by investigators working with tissue extracts.

Other investigators are studying the relationship of endocrines and hormones to nervous influences, stress, and alarm reaction. They postulate that nerve impulses arising in the frontal lobes of the brain may stimulate the anterior lobe of the pituitary gland, which in turn may liberate a hormone activating the cortex of the adrenal gland. The adrenal gland could then liberate another hormone which might cause the kidney to produce its enzyme.

Instances of reduction of blood pressure following operations upon the frontal lobes are reported. Development of drugs acting upon these lobes, the whole brain, or nerve centers at the base of the brain is receiving increased attention. Fundamental research has developed several additional mechanisms which may produce elevation of blood pressure. As yet, however, these have not been sufficiently investigated.

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In general, progress in research has increased knowledge of mechanisms capable of causing hypertension. Unfortunately the means of definite proof that any of these mechanisms exists in a given patient is lacking and specific medical treatments are yet to be developed.

There is, however, definite hope that treatments for several aspects of the disease will be discovered. In view of the serious nature of the problem and the widespread and increasing occurrence of the disease, it is imperative that research be coordinated, accelerated, and adequately supported.

Rapid Desalting for Hypertension

RAYMOND S. MEGIBOW, M.D., HERBERT POLLACK, M.D., GENE H. STOLLERMAN, M.D., EDWARD H. ROSTON, M.D., AND JOHN J. BOOKMAN, M.D.*

A PALATABLE diet containing very little sodium together with mercurial diuretics to increase the rate of urinary sodium excretion may reduce high blood pressure to normal level in a few days. Even if hypertension is unaffected, vasospasm, severe headache, and other symptoms may be greatly relieved for many months.

Food containing 75 gm. protein, 90 gm. fat, 240 gm. carbohydrate, and not over 200 mg. sodium is given for five to seven days by Raymond S. Megibow, M.D., and associates of Mount Sinai Hospital, New York City. Mercupurin is then added by intramuscular injection in doses of 2 cc. at intervals of one to four days. The total dosage in 8 cases of moderate to malignant grade was 8 to 32 cc.

For 5 of 8 patients, hypertension decreased within about four and a half days after the first injection. In 1 instance blood pressure dropped from 244/124 to 126/84 in eight days. In another the drug raised the blood urea nitrogen concentration and was discontinued.

Improvement in blood pressure was maintained by the low-sodium diet in 4 of 5 cases observed up to six months after discharge from the hospital.

Relaxed vasomotor tone was shown by more ample blood flow and improvement in retinal lesions, even though the blood pressure remained high. Changes in blood pressure and in the vessels seem to involve different mechanisms, at least in some instances. In 4 cases vasospasm was not affected by tetraethylammonium chloride before sodium loss, but after treatment blood flow was increased by the drug in 3 cases and blood pressure fell in 2.

* The treatment of hypertension by accelerated sodium depletion. J. Mt. Sinai Hosp. 15:233-239, 1948.

Medical Forum

Discussion of articles published in MODERN MEDICINE *is always welcome. Address all communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

Acute Benign Pericarditis*

TO THE EDITORS: I believe that the description of the pain in so-called acute benign pericarditis incriminates the pleura as well as the pericardium, as many previous contributors have indicated. We know that pericarditis of uremia, often not discovered until autopsy, is usually painless in the presence of auscultatory and electrocardiographic findings.

I believe that in this type of pericarditis the early development of fever, increased white count, and elevated sedimentation rate should be reemphasized. We know that these laboratory findings occur in myocardial infarction as well but require a definite time interval for their appearance since they depend upon absorption of the necrotic material from the infarcted area for development.

The friction rub, which is evanescent in this type of pericarditis, also occurs in myocardial infarction, and I am not too impressed with its diagnostic specificity. It should always be looked for in both conditions.

The electrocardiogram offers the best evidence in differential diagnosis. These evidences are well summarized in the article by Drs. Robert B. Logue and Martin H. Wendkos.

Serial electrocardiography cannot be overemphasized in the observation of patients with chest pain of the type referred to in the article, since too early electrocardiography may give a false sense of security in myocardial infarction.

A latent period of as long as a week may elapse before the changes associated with the infarction become manifest.

JOHN M. MURPHY, M.D.

Detroit

► TO THE EDITORS: To make a differential diagnosis between acute pericarditis and coronary infarction, a careful history emphasizing the exact time and nature of onset of symptoms is obviously indispensable.

The general practitioner is most often called upon to make this difficult diagnosis because he is the one who sees the patient when the first evidence of illness sets in.

As coronary occlusion with cardiac infarct may be followed by fibrinous pericarditis, one always must think of an underlying myocardial infarction. However, the pericarditis without myocardial infarction is not an uncommon disease. The main points to be considered in differential diagnosis follow in the table.

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Milwaukee

* MODERN MEDICINE, Jan. 15, 1949, p. 49.

DIFFERENTIAL DIAGNOSIS

Acute Pericarditis	*Infarction*
A history of fever, upper respiratory infection, or pleuritic pain.	Onset usually abrupt without evidence of fever or infection, but following anginal attacks or some evidence of cardiac disability.
Most often found in individuals under fifty.	Most often found in people over fifty.
Sex not significant.	Males predominate, between 4 and 6 to 1.
Pericarditis characterized by a superficial type of pain, substernal or pericardial in type, spreading over the left side of the chest.	Pain dull, deep in the chest, and characterized by vice-like constriction with referred pain into the neck and down the arms.
Pain sharp, cutting, rather constant, and influenced by breathing.	Pain not influenced by breathing.
Sequence of events unlike that with infarct. Sharp pains with a pericardial friction rub. After a day or two, heart sounds are distant, dull, and rapid; pain disappears, and dyspnea due to pericardial effusion is apt to occur.	Characteristic pain with the associated picture of either shock or impending shock. Pericardial friction may develop a few days later, but the myocardial injury dominates the clinical picture.
Blood pressure remains normal and the pulse rate and fever elevated from the beginning, even before the pericarditis.	Blood pressure usually drops, and fever comes later, usually in a day or so.
Clinical picture is one of pain without the profound aspects of impending death.	Although there is pain, there is also the profound anguish and apprehension of imminent death.
The course of pericarditis is brief, and after a few days tends to clear.	Course is prolonged and slow to respond to treatment.
Usually typical features of pericarditis are found which differ from those of coronary occlusion. This is particularly underscored by the elevation of the S-T in all leads and the uniform inversion of the T wave throughout.	Reciprocal changes of the S-T in I and III, and other distinctive features of coronary occlusion.

► TO THE EDITORS: Acute pericarditis should be regarded as one of the manifestations of a systemic disease, not as a disease entity or a complication.

The fibrinous and serofibrinous forms of acute pericarditis are the only two which may be mistaken for myocardial infarction. This type of pericarditis is most often seen during or following the active or reactivated phase of rheumatic fever or as a part of any systemic infection when the inflammation is localized *intrathoracically*.

Fibrinous pericarditis occasionally occurs in myocardial infarction if the lesion is very superficial or if it reaches the epicardial surface. It is also seen in the terminal stages of uremia.

Acute pericarditis is not an uncommon finding if looked for, and accounts for the so-called "milk patches"

DIFFERENTIAL DIAGNOSIS

Acute Pericarditis	*Acute Myocardial Infarction*
Evidence of infection, occasional trauma, or terminal uremia	Evidence of degenerative changes, metabolic disturbances, psychogenic factors, or occasional trauma
Precordial pain, stabbing, sticking, or burning in character, rarely oppressive or like indigestion	Substernal pain, most frequently oppressive, occasionally burning, very often like indigestion
Radiation rare	Radiation to back, shoulder, or arm frequent
Often aggravated by deep inspiration	Occasionally aggravated by deep inspiration
No previous history of precordial pain on effort, particularly from walking after meals, or during emotional stress	Thorough questioning elicits history of pain on effort, particularly from walking after a heavy meal, or during emotional stress
Elevation of temperature most often precedes onset of pain. "I felt somewhat grippy a day or two ago" is commonly reported.	Elevation of temperature from eight to twenty-four hours after onset
Heart consciousness, palpitation, and some faintness at onset	Nausea, vomiting, and various degrees of shock common at onset
Mild dyspnea may occur	Severe dyspnea and pulmonary edema may usher in the attack
Perspiration warm	Perspiration cold
No signs of peripheral failure	Signs of peripheral failure may occur at onset or soon after
Blood pressure not strikingly influenced	Blood pressure falls in varied degrees
Heart sounds normal unless associated with myocardial involvement	Heart sounds weak. First sound often reduplicated or gallop rhythm
Location of friction rub in any part of heart, most often basal portion. Friction sound lasts at times for weeks or months and sometimes years. Often mistaken for endocardial lesions.	Friction rub most frequently located close to apex because most infarcts occur in the anterior and apical portion of the left ventricle. Friction rub, when present, lasts a few hours or few days

DIFFERENTIAL DIAGNOSIS *(cont.)*

Acute Pericarditis	*Acute Myocardial Infarction*
Sedimentation rate elevated when clinical signs are present	Sedimentation rate increased after the second or third day
Leukocytosis present when clinical signs are apparent	Leukocytosis with increased polymorphonuclear count may be present in twelve hours after onset
Electrocardiographic findings as reported by Drs. Logue and Wendkos are seen only if the myocardium is involved. Bundle-branch block also occurs in pericarditis with myocardial involvement	Electrocardiographic changes rarely absent. Configuration depends upon the site of the lesion and degree of involvement.
If looked for roentgenologically, pericardial effusion is more frequent than suspected. Amount of fluid is rarely enough to be diagnosed clinically, nor does the heart assume the typical configuration of an effusion. However, with more than 200 or 300 cc. of fluid an increase in the acuteness of the right cardiohepatic angle may be seen. A widening of proportion of the upper cardiac silhouette in reclining position is an important finding. An appreciable diminution in the cardiac silhouette after recovery is indicative of an unrecognized pericardial effusion.	Pericardial effusion rare

found during routine postmortem examinations. These patches are old areas of fibrosis covered by endothelium.

The term "acute benign pericarditis" employed by Drs. Logue and Wendkos is a rechristening of the old term "primary idiopathic pericarditis" which may be open to question in the light of present-day medicine.

The older clinicians considered exposure to cold and trauma as potent factors in the production of pericarditis, and this may actually be the case in some instances. However, in addition to being part of a systemic disease, we know that focal infections, particularly infected imbedded tonsils, pyorrhea, and apical and periapical abscesses may be important etiologic factors.

Like acute pericarditis, myocardial infarction is not a disease entity but a manifestation of a systemic disease. This fact is too frequently overlooked. Atheromatosis, not arteriosclerosis, a term which should be used only for medial sclerosis described by Mönckeberg, is the most common cause of myocardial infarction. It is also seen in essential hypertension, mainly of the benign type, and in patients with hypertensive diencephalic syndrome.

Acute myocardial infarction resulting from allergic and infectious arteritis as well as psychothrophic angiothrombosis is also a not infrequent finding. Myocardial infarcts are rarely due to emboli.

It is, therefore, important to recall the systemic diseases in which acute pericarditis and acute myocardial in-

farction are most frequently seen. These differ vastly. After this consideration, the difference in the pattern of these two *clinical* entities may further aid in differential diagnosis.

JOSEPH B. WOLFFE, M.D.
Philadelphia

► TO THE EDITORS: The onset of pericarditis is usually secondary to some acute generalized infection but may also be secondary to an active focus of infection, especially if this latter is due to a streptococcus of a hemolytic group or to a pneumococcus. Other organisms have been found as the cause of acute pericarditis, but by far the most common etiology is rheumatic fever, pneumococcic or streptococcic infections, or tuberculosis.

Acute pericarditis is more commonly seen in the younger age groups than is coronary infarction. In general, onset of acute pericarditis is less abrupt and its clinical course of more gradual ascent than is the case with acute coronary thrombosis; and, in general, the signs of acute circulatory shock are not as profound as those seen in coronary cases.

The distribution of pain is not of much aid in the differentiation because the same sensory pathways may be affected in both. Behavior of the pain may be of minor help since the pain in acute pericarditis is usually more affected by respiration, cough, and movement than that due to acute coronary occlusion.

The same may be said in regard to pericardial friction rubs, since these are a common characteristic of anterior wall infarctions as well as of acute pericarditis. The persistence of pain over the precordial area or substernally is, likewise, not of material aid in the differentiation, since both diseases may exhibit the characteristic, but a history of previous anginal attacks would throw the weight of evidence toward a coronary basis.

The electrocardiographic signs of acute pericarditis may vary a great deal as far as the type and extent of changes seen, although it is true that certain patterns appear to be more common than others. Both pericarditis and coronary infarction may show the same type of S-T-T changes, especially if the active precordial electrode is over an area of subepicardial injury.

Changes in the intrinsicoid ventricular deflection, however, produced by areas of infarcted muscle and described by Myers *et al.*, should be carefully searched for with the aid of multiple precordial leads of the Wilson or Goldberger type, as well as unipolar extremity leads, since such changes are seldom if ever seen in acute pericarditis per se and are considered pathognomonic of an area of infarcted muscle.

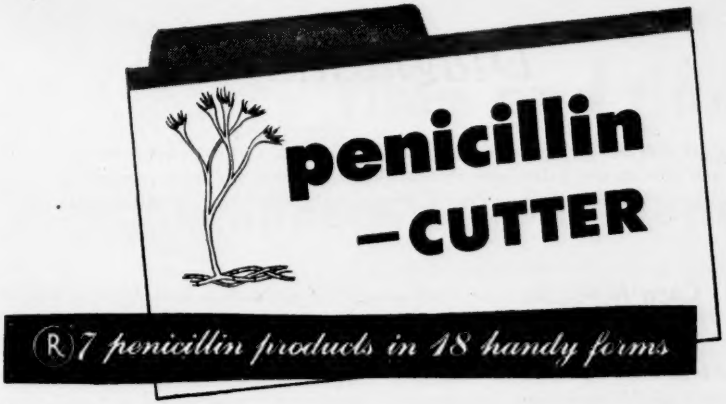
JAMES F. WADDILL, M.D.
Norfolk, Va.

Tear Sac Infection*

TO THE EDITORS: The probing of the nasolacrimal duct as recommended for tear sac infection in children by Dr. James V. Cassady appears to me to be too drastic. I would suggest in such cases of dacryocystitis to press the region of the lacrymal sac with the index finger. It is an old experience and helps to evacuate the tear sac.

THEODORE FISCHER-GALATI, M.D.
Andover, Mass.

* MODERN MEDICINE, Dec. 1, 1948, p. 59.



(R) No. 1—HYPERCILLIN*

Crystalline salt of procaine penicillin G in a base of aluminum monostearate in sesame oil. Supplied in 1cc. and 10cc. vials—300,000 units per cc. Can be stored at room temperature for 12 months.

(R) No. 2—4-DAY HYPERCILLIN*

Micronized crystalline salt of procaine penicillin G in a special water-repellent base of 2% aluminum monostearate in peanut oil. Supplied in 1cc. and 10cc. vials—300,000 units per cc. Also, Cutter disposable syringe containing 1cc.—300,000 units. Can be stored for 12 months at room temperature.

(R) No. 3—WATER SOLUBLE PENICILLIN

Crystalline potassium penicillin G in rubber-stoppered vials. Supplied in 100,000; 200,000; 500,000 and 1,000,000 units. Can be stored 36 months at room temperature.

(R) No. 4—AQUEOUS PROCAINE PENICILLIN

300,000 units procaine penicillin G, and 60,000 units buffered crystalline potassium penicillin G per cc. Supplied in 5 dose bottle. Can be stored for 12 months at room temperature.

(R) No. 5—PENICILLIN ORAL TABLETS

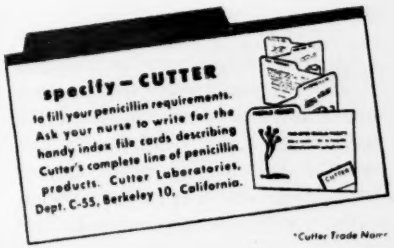
Crystalline potassium penicillin G tablets buffered with calcium carbonate. Supplied in vials of 12, 25, 100 in 50,000 unit tablets and 12, 100 in 100,000 unit tablets. May be stored up to 18 months at room temperature.

(R) No. 6—PEN-TROCHES*

Crystalline potassium penicillin G troches massed without water. Supplied in moisture-proof vials of 20 troches—1,000 units and 25 troches—5,000 units.

(R) No. 7—PENICILLIN FOR INHALATION—CUTTER

Crystalline potassium penicillin G micronized. Supplied in packages containing 3 cartridges (100,000 units each) and 1 Cutter penicillin inhalation unit for administration.



*Cutter Trade Name

Diagnostix

Here are diagnostic challenges presented as they confront the consultant from the first clue to the pathologic report. Diagnosis from the Clue requires unusual acumen and luck; from Part II, perspicacity; from Part III, discernment.

Case MM-139

THE CLUE

ATTENDING M.D: Since our neurologist is out of town I have been asked to present an interesting problem to you. The patient is a forty-year-old man who has a history of three convulsive seizures, six, five, and three months ago. These were generalized clonic-tonic seizures with incontinence and loss of consciousness. He has complained of headache for five months. For the past month he has had various auditory hallucinations.

VISITING M.D: Where are the headaches? Do they waken him from a sound sleep? Are they getting worse?

ATTENDING M.D: They are dull and located in the occipital area. He awakens at night and is aware that the headaches are present but I am not sure if they wake him up.

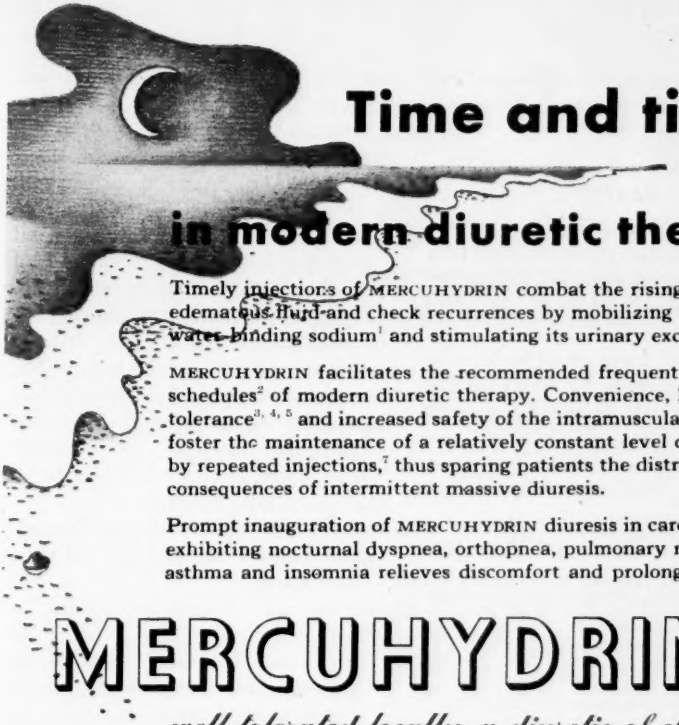
VISITING M.D: *(Walking into patient's room and addressing the patient)* Have you ever noticed being awakened from a sound sleep by your headaches?

PATIENT: Yes, several times.

VISITING M.D: *(Aside)* Hmmm, very important.

ATTENDING M.D: The headaches are be-





Time and tide

in modern diuretic therapy

Timely injections of MERCUHYDRIN combat the rising tides of edematous fluid and check recurrences by mobilizing water-binding sodium[1] and stimulating its urinary excretion.

MERCUHYDRIN facilitates the recommended frequent-dosage schedules[2] of modern diuretic therapy. Convenience, high local tolerance[3, 4, 5] and increased safety of the intramuscular route[6] foster the maintenance of a relatively constant level of body fluid by repeated injections,[7] thus sparing patients the distressing consequences of intermittent massive diuresis.

Prompt inauguration of MERCUHYDRIN diuresis in cardiac patients exhibiting nocturnal dyspnea, orthopnea, pulmonary râles, cardiac asthma and insomnia relieves discomfort and prolongs life.[8]

MERCUHYDRIN®

well tolerated locally, a diuretic of choice

Administration prior to or concurrently with digitalization avoids driving the faltering heart against an accumulated fluid burden and prevents the overdigitalization which may occur when postponed diuretic therapy mobilizes previously administered cardioactive glycosides from edema fluid.[9]

DOSAGE: 1 cc. or 2 cc. intramuscularly or intravenously, given daily, or as indicated, until a weight plateau is attained. Subsequently the interval between injections is prolonged to determine the maximum period permitted to intervene between maintenance injections.

PACKAGING: MERCUHYDRIN (meralluride sodium) is available in 1 cc. and 2 cc. ampuls.

BIBLIOGRAPHY: 1. Reaser, P. B. and Burch, G. E.: Proc. Soc. Exper. Biol. & Med. **63**:543, 1946. 2. Conferences on Therapy, New York State J. Med. **43**:2306, 1943. 3. Finkelstein, M. B. and Smyth, C. J.: J. Michigan State Med. Soc. **45**:1618, 1946. 4. Modell, W., Gold, H., Clarke, D. A.: J. Pharm. & Exper. Therap. **84**:284, 1945. 5. Jezer, A. and Gross, H.: Med. Clin. North America, Sept. 1947, p. 1301. 6. Wexler, J. and Ellis, L. B.: Am. Heart J. **27**:86, 1944. 7. Conferences on Therapy, New York State J. Med. **44**:280, 1944; **46**:62, 1946. 8. Donovan, M. A.: New York State J. Med. **45**:1756 (Aug. 15) 1945. 9. Levine, S. A.: Clinical Heart Disease, 2nd ed., Philadelphia, W. B. Saunders, 1942, p. 334.

Lakeside Laboratories, INC., MILWAUKEE 1, WISCONSIN

coming progressively worse and are aggravated by coughing, sneezing, and stooping.

PART II

VISITING M.D: *(Aside)* Obviously an organic headache, probably due to a brain tumor. Before I examine the patient please tell me all the pertinent history.

ATTENDING M.D: I was about to describe the hallucinations. He hears various peculiar sounds, running feet, milk bottles rattling, cows mooing, motors running, and so forth, including a very distinct sound of bedsprings bouncing.

VISITING M.D: Is he aware that these are spurious?

ATTENDING M.D: What?

VISITING M.D: False.

ATTENDING M.D: I don't know.



VISITING M.D: *(To patient)* Do you think these sounds are real, or imagined?

PATIENT: I know they ain't real, Doc.

ATTENDING M.D: So far as we can tell, up until the time of the first convulsion he was in excellent general health. He has had some periods of confusion since, but no visual disturbances, nausea, or vomiting.

VISITING M.D: If the auditory hallucinations are due to a temporal lobe tumor—uncinate type—there should be some interruption of the visual radiations through the temporal lobe. How are his visual fields?

ATTENDING M.D: Normal.

VISITING M.D: Electroencephalogram?

ATTENDING M.D: Right temporal delta localization.

VISITING M.D: Things are coming together now. If I'm not being led into a trap, I would at this moment speculate that this man has a right temporal lobe tumor and, in view of the short history, a bad one. Have you examined the spinal fluid?

PART III

ATTENDING M.D: No. We never do a spinal fluid examination in a case of suspected brain tumor until the neurosurgeon has seen the patient. One can get into trouble, with herniation of the cerebellar tonsils into the foramen magnum or disturbance of the cerebrospinal fluid dynamics making an encephalogram difficult to interpret.

VISITING M.D: Moreover it would be a needless jab in the back since this man will need air studies. Routine laboratory work?

ATTENDING M.D: Chest ray, urinalysis, hemoglobin, sedimentation rate,



Infancy

". . . addition of vitamin B complex to the diet of normal neonatal infants results in a significant increase in weight gain...It is therefore suggested that the diet . . . be supplemented by the addition of B complex vitamins . . . from the onset of feeding."

—Kasdon, S. C., and Cornell, E. L.: Am. J. Obst. & Gynec. 56: 853 (1948).

Childhood and Adolescence

"...nutritional deficiency may occur in children and adolescents much more commonly than previously supposed."

—Biskind, M. S., and Williams, R. R.: Am. J. Digest. Dis. 14: 121 (1947).

Lactation

". . . the B complex given during the antenatal period may contribute to lactation by improvement in the general nutritional state."

—Brougher, J. C.: West. J. Surg. 52: 274 (1944).

Old Age

"The teeth, gastric acidity, probably absorptive powers, vitamin storage—all begin to fail with age."

—Touhy, E.: in Handbook of Nutrition. Chicago, American Medical Association, 1943; p. 384.

FORTIFIED YEAST EXTRACT

Kinney®

is a highly concentrated aqueous extract of specially cultured yeast, providing whole natural vitamin B complex fortified with important crystalline B factors.

Each teaspoonful (5 cc.) contains not less than:

Thiamine Hydrochloride	2.0 mg.
Riboflavin	3.0 mg.
Niacinamide	20.0 mg.
Calcium Pantothenate	1.0 mg.
Pyridoxine Hydrochloride	0.5 mg.

Plus other B vitamins present in yeast extract.

Palatable • Potent • Readily Absorbed

SUPPLIED: Bottles of 4 fl. oz. and 1 pt.

Also available:

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KINNEY & COMPANY

Kinney®

Prescription Products

COLUMBUS INDIANA

white cell count, and flocculation test for syphilis are all normal. The general medical examination is negative.

VISITING M.D: Including rectal?

ATTENDING M.D: Yes.

VISITING M.D: We are more or less forced to make a diagnosis of primary glioma of the brain. In tumors of short duration, the lesion may be secondary, usually from the lungs, stomach, gastrointestinal tract, prostate, and so on. In the absence of any general symptoms we begin with the premise that the tumor is primary in the brain. This short history suggests a glioblastoma multiforme. Now for the localization. *(Examining the patient)* I find the neurologic examination completely negative. This is strange. Now what do we have for localization? Generalized convulsions, without focus of onset, and without evidence of choked disks. Let's see the film of the skull. *(Examines)*—negative. All this points to a temporal lobe lesion, or at least a right-sided lesion. The electroencephalogram is highly suggestive but not conclusive. The auditory hallucinations, without any optic tract radiation interruption, force me to locate the lesion in the parietal area behind the motor cortex where it could press upon the auditory temporal cortex. There is no hemiplegia, and no pyramidal signs such as Babinski. Even the abdominals, which often first give the clue in incipient pyramidal lesions, are normal.

PART IV

VISITING M.D: *(One week later)* I saw the neurosurgeon who operated on our patient. He had a glioblastoma multiforme of the right parietal lobe. It was of considerable help to him that we didn't think it was in the temporal lobe, since he did not need to turn too large a flap. They did a ventriculogram first, which was negative. The tumor is, of course, inoperable—solid, hemorrhagic, meaty, and infiltrating into the surrounding brain, as these tumors usually are. The neurosurgeon certainly was playing with loaded dice.

Indications for Nerve Block in Paraplegia

Blocking maneuvers are desirable in cases of traumatic cord bladder to distinguish between functional and structural contractures at the vesical neck and pelvic floor. Dr. Ernest Bors and associates of Birmingham Veterans Administration Hospital, Van Nuys, Calif., give indications for four kinds of block:

► Pudendal block—a positive bulbocavernosus reflex and closed vesical neck of an upper neuron bladder or a positive anal reflex and open vesical neck.

► Transurethral vesical neck block—before resection in lower neuron bladders.

► Subarachnoid alcohol block—in spastic upper neuron bladders.

► Spinal anesthesia—prognostication after subarachnoid alcohol injection. *Bull. Am. Coll. Surgeons 34:30, 1949.*

Announcing
an unusually palatable
liquid penicillin
for oral use

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ESKACILLIN is pleasant-tasting and easy-to-give. Your patients—children, the aged and others who balk at tablets and bitter mixtures—will actually like to take ESKACILLIN. In addition, ESKACILLIN:

1 . . . Spares children the pain and disturbance of injections.
2 . . . Spares parents the chore of crushing tablets and coaxing sick children to swallow an unappealing mixture.
3 . . . Maintains its potency for 7 full days when kept in a refrigerator.

One teaspoonful (5 cc.) of ESKACILLIN contains 50,000 units of crystalline penicillin G—the same potency as the usual oral penicillin tablet.

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Stand for Injection Treatment of Varicose Veins

Design combines utility with safety and trim appearance

ARRANGEMENT of a position comfortable for the patient and convenient for the operator when injecting varicose veins of the leg is difficult. High stools and kitchen stepladders are unstable and afford no support for the patient. Furniture built to order is usually bulky and unsightly.

A practical stand described by Dr. F. M. Al Akl of Brooklyn combines maximum utility with simplicity of construction. The frame is of triple-plated tubular steel. The step and platform are made of five-ply veneer covered with laminated linoleum.

The broad top has ample room for the patient to stand comfortably or turn with safety during examination or treatment. The step leading to the platform may be used as a temporary shelf for syringes and sponges and the high gloss chrome frame is a handy place for adhe-

As injection stand



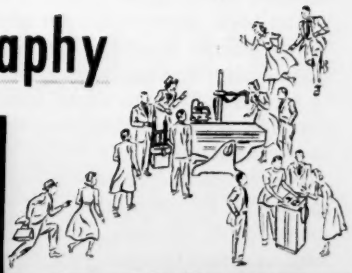
head support . . .



. . . extra chair



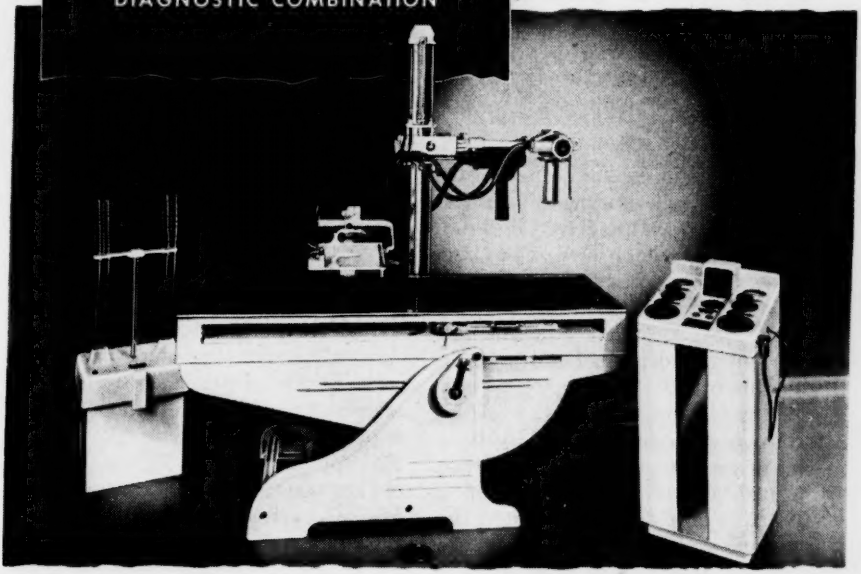
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DIAGNOSTIC COMBINATION



FOR any diagnostic requirement . . . in office, clinic or hospital . . . the Keleket W-3 100 Combination, using single or double tube, offers exceptional convenience and economy.

Among features not usually found in X-ray equipment of this capacity, the W-3 100 unit includes the famous Keleket Multicron 100 generator, double rail-mounted tube stand with telescopic carriage and choice of hand or motor driven tilt-table.

The table, for example, is easily removed from Trendelenburg to vertical position—regardless of patient's weight. Angulating scales make exact positioning and re-positioning quick and easy. A positive clutch stops the table at any point desired.

Permitting greatly simplified technics, these and other Keleket features recommend the W-3 100 Combination for *your* practice. Ask your Keleket Representative for complete details or write for literature.

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sive strips which are to be used to tape the site of punctures.

The back support may be adjusted to any desired height by merely pulling a spring tension button and may be locked halfway to afford head support for a patient receiving nose or throat treatment.

When not in professional use, the top bar of the adjustable back can be dropped all the way and the stand used as an additional chair to accommodate a parent or visitor in the treatment room.

Steel Staples Correct Leg Deformities

Crippled children may be helped to normal walking by means of stainless steel staples which are driven into the bone to bridge the growth zone. The staples, demonstrated by Dr. Walter P. Blount and associates of Milwaukee at the Chicago meeting of the American Academy of Orthopedic Surgeons, prevent limping and correct knock-knee, bowleg, the back-knee deformity of poliomyelitis, and the bent knee sequela of arthritis or trauma. Through a small incision the staples are driven into the bone to stop the leg from growing at one of several levels of growth. For instance, the staples are placed on the inner side of the knee to correct knock-knee, and on the outer side for bowlegs. The child is ambulatory a few days after operation. When the deformity is corrected the staples are removed and the bone starts to grow again. The treatment may be used for children as young as eight years of age but must be begun while the patient still has two or more years to grow.

Prosthesis for Pneumonectomy

Mediastinal shift may be prevented after pneumonectomy by filling the dead pleural space with a polythene bag. Lung-shaped bags filled with fiber glass and air were placed in the empty cavities of dogs and rats after right or left pneumonectomies and phrenic nerve section. Dr. John H. Grindlay and associates of the Mayo Foundation, Rochester, Minn., report that neither mediastinal shift nor pleural effusion occurred in any of the animals and emphysema in the other lung and cardiac enlargement were not observed. The dogs with the prostheses were in better condition postoperatively than regularly pneumonectomized animals.

Bull. Am. Coll. Surgeons 34:28, 1949.

Prefabricated Leg Brace

An aluminum leg brace manufactured in parts which may be rapidly assembled to meet each patient's needs is being demonstrated by the Army. The apparatus is 60% lighter than an ordinary steel prosthesis, announces Maj. Gen. Raymond W. Bliss, Surgeon General. Another advantage of the Army device is a two-pivot knee joint available in four interchangeable assemblies: [1] a free knee joint approximating the sliding motion of the normal knee, [2] two pivot areas controlled by an automatic lock mechanism, [3] two pivot areas activated by a spring mechanism, and [4] a joint to be used with a stiff or contracted knee. The ankle joint is placed at ankle height and may be changed from shoe to shoe.

gastro-enteric ALLICHALONE

In 1944 **VAN PATTEN** sponsored extensive medical research on dehydrated garlic (allium sativum) to determine its therapeutic value for functional gastro-intestinal conditions. After five years of careful study, an important discovery was made.

It was found that garlic contains unidentified principles which relax gastric and intestinal spasm, retard excessive peristalsis, and effectively relieve the distressing symptoms of flatulent or nervous dyspepsia. To these therapeutic factors collectively the name *gastro-enteric allichalone* has been applied (*allium*, garlic; *chalone*, to relax).

Comparison roentgenograms show conclusively that **ALLIMIN** Garlic Tablets have a sedative action on the stomach and intestines.

Clinical results in a series of cases of functional dyspepsias and gastric neuroses were impressive:

Heaviness after meals relieved in 84% of all cases; complete relief in 60% of all cases.

Belching relieved in 88% of all cases; complete relief in 52% of all cases.

Flatulence relieved in 84% of all cases; complete relief in 80% of all cases.

Gas colic relieved in 87% of all cases; complete relief in 54% of all cases.

Nausea completely relieved in 75% of all cases.

THERAPEUTIC USES. The remarkable and unique carminative properties of ALLIMIN, now scientifically established by clinical research, may be used with prompt satisfaction in many functional gastro-intestinal conditions. The principal indications are in flatulent or nervous dyspepsia and in gastric neuroses.

For symptomatic relief, **ALLIMIN** may be prescribed with confidence for complaints of heaviness after meals (epigastric or abdominal distress), belching, flatulence, gas colic and nausea.

ADMINISTRATION. The recommended dosage is 2 tablets after meals with a little water. The tablets should be swallowed whole, not chewed. Medication should be continued three times daily, or after lunch and dinner when the patient eats a light breakfast, according to clinical progress and indications.

Mail Coupon for Samples, Literature

COMPOSITION. ALLIMIN Tablets contain 4¾ grains of dehydrated garlic, flavor modified with dried parsley and sugar-coated for palatability.

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Short Reports

NUTRITION

Hormonal Hypertension Favored by Amino Acids

Dietary proteins supplied by amino acids suffice to sensitize rats to toxic effects of overdosage of lyophilized anterior pituitary (LAP). Dr. Olga B. Henriques and associates of the University of Montreal report that adrenal enlargement, nephrosclerosis, and hypertension are produced by LAP in animals maintained on a synthetic diet containing no protein but an adequate amount of a mixture of crystalline amino acids. Lesions are less severe, however, than when the rats receive an equivalent amount of nitrogen in the form of a casein hydrolysate. Pathologic changes are not produced by LAP when the animals are fed other diets deficient in proteins.

Proc. Soc. Exper. Biol. & Med. 69:591-593, 1948.



"Now you're getting at the root of your trouble."

ORTHOPEDICS

Intramedullary Pinning

Fracture healing in long bones is accelerated by the presence of a steel pin in the bone marrow cavity. To determine the effects of intramedullary pinning, the ulnas of 10 dogs were fractured bilaterally with a Gigli saw. On one side a stainless steel pin was inserted through the olecranon into the medullary cavity past the fracture site. No pins were placed in the other side. Union was always more rapid on the pinned side, found Dr. William T. Fitts, Jr., and associates of the University of Pennsylvania, Philadelphia. The foreign body apparently increases periosteal reaction and callus formation.

Bull. Am. Coll. Surgeons 34:36, 1949.

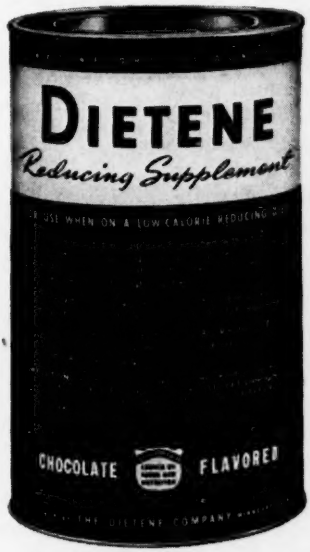
ANESTHESIOLOGY

Vasopressors Compared

Hypotension occurring during spinal anesthesia is effectively combated by desoxyn (d-desoxyephedrine), especially in long operative procedures. For surgery of short duration requiring low levels of anesthesia, as in transurethral resection, oenethyl

It is a Question of Management..

The treatment of obesity is simple. It is the management of the obese patient that presents the problem.



DIETENE® is of real value in the management of the obese patient, particularly during the early days of diet restrictions, when the pangs of hunger may tempt the patient to deviate from the regimen.

DIETENE supplies essential protein, vitamins, and minerals in a very palatable form. One-pound cans, plain or chocolate flavor, are available to patients through all pharmacies at $1.55.

Send for your *free supply* of the 1000-calorie Dietene Reducing Diets. Diets are made up to look as if they were typed in your office for the individual patient.

Specify DIETENE in reducing diets to maintain adequate protein-vitamin-mineral intake.

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(2-methyl-amino-heptane) may prove equally valuable, find Drs. Earl L. Yeakel, Jr., and Thomas H. Seldon of the Mayo Clinic, Rochester, Minn. The records of 1,000 operations performed at the Mayo Clinic show that desoxyn, oenethyl, and ephedrine are all useful to maintain blood pressure, but that a single dose of desoxyn suffices in significantly more cases than does one dose of either oenethyl or ephedrine. Original doses, given intramuscularly at the time of the spinal anesthetic, were as follows: for desoxyn, 10 to 30 mg.; for oenethyl, 50 mg.; and for ephedrine, 25 to 50 mg. Under the most adverse conditions, desoxyn was successful in over 87% of cases and no unusual side effects were reported. Oenethyl should be used cautiously when blood pressure is unusually labile.

Anesthesiology 9:605-613, 1948.

PUBLIC HEALTH

Purification of Atomic Waste

Disposal of radioactive wastes from atomic energy plants presents a safety problem that may be solved by a two-stage activated sludge process employing bacteria much as a modern sewage disposal plant does. Dr. C. C. Ruchhoft of the United States Public Health Service reports that at Los Alamos, N. M., as much as 99% of the plutonium was removed from wastes. Whether bacteria will also absorb other types of radioactive material is still to be determined. Scientists are also pondering what to feed the bacteria. In the ordinary disposal plant the organisms live on the sewage material being treated. Adequate sewage is not available in many areas where radioactive wastes accumulate.

OBSTETRICS

Intravenous Iron for Anemia of Pregnancy

Most commonly anemia is manifested in the last trimester of pregnancy, leaving little time for treatment. By intravenous injection of saccharated iron oxide, hemoglobin may be increased by as much as 8% in the first week of treatment. Drs. A. D. T. Govan and Jean M. Scott of the Glasgow Royal Maternity and Women's Hospital, Scotland, found intravenous iron satisfactory in treatment of 25 anemic pregnant women, 2 of whom had not been improved by prolonged treatment with oral iron. A dose equivalent to 30 mg. of elemental iron is given the first day, 60 mg. the second, and 100 mg. daily thereafter. At the end of a week injections are made on alternate days. Reactions to early injections are slight, but 1 patient had a severe reaction resembling anaphylaxis when given an injection twelve days after the previous one.

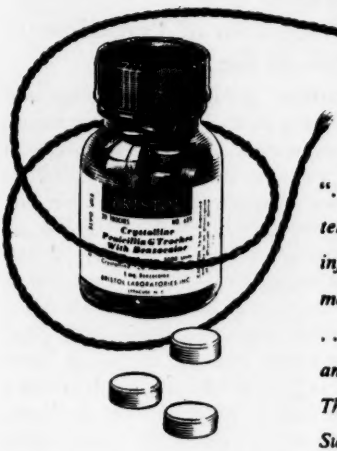
Lancet 266:14-16, 1949.

BIOCHEMISTRY

Chemical Found in Genes

A substance present in nuclei of cells, desoxyribonucleic acid, is also a constituent of genes, Dr. A. E. Mirsky of Rockefeller Institute for Medical Research reported at a sectional meeting of the American Chemical Society in New York City. In each animal species the quantity of the chemical is identical for each cell, except that male sex cells, which have only one set of genes, contain only half as much desoxyribonucleic acid as the other cells, thereby definitely establishing the chemical as a constituent of the genes.

A STITCH IN TIME



". . . . The prophylactic use of penicillin tends to reduce postoperative inflammation of the oral mucous membrane and the incidence of infection . . . There is less postoperative pain and healing is more rapid." Faier, A.D.: The Prophylactic Use of Penicillin in Dental Surgery. Dental Digest, 153:336, July, 1947.

For either prophylactic or therapeutic purposes, Bristol CRYSTALLINE PENICILLIN G TROCHES with Benzocaine provide an efficient means for controlling intraoral infections due to penicillin-sensitive organisms. Inserted into the buccal sulcus, the troche dissolves slowly, directly bathing all accessible mucous membranes with an effective and prolonged concentration of penicillin. In the presence of painful, inflammatory or traumatic mouth lesions, the local anesthetic effect of benzocaine will be found especially desirable.

Each pleasantly flavored troche contains 5000 units of Crystalline Potassium Penicillin G, and Benzocaine, 5 milligrams. They are available from your usual source of supply in bottles of 20.

Bristol

Crystalline Penicillin G Troches

with Benzocaine

Bristol
LABORATORIES INC.
SYRACUSE, NEW YORK

CHEMOTHERAPY

A New Trypanocide

Subcutaneous administration of a newly discovered drug, antrycide, is curative for several trypanosome infections in mice. The drug, known chemically as 4-amino-6-(2′-amino-6′-methylpyrimidyl-4′-amino) quinaldine-1:1′-dimetho salt, also possesses prophylactic action against experimental trypanosome infections, according to Dr. D. G. Davey and the late Dr. F. H. S. Curd of Manchester, England. Field trials in Africa indicate that the material, which is administered with ease and safety, may cure trypanosome infections in cattle, horses, donkeys, dogs, and camels.

Nature 163:89-90, 1949.



"Peculiar symptoms—palpitations and a red rash!"

CHEMOTHERAPY

Prolongation of Penicillin Levels in the Blood

Practical penicillin-sustaining and enhancing products for subcutaneous, intramuscular, and oral use in human beings may be developed as a result of studies of formaldehyde-treated protein preparations and of Tween 20, a polyoxyalkylene derivative of sorbitan monolaurate. Dr. Leo Loewe and associates of Jewish Hospital, Brooklyn, obtained measurable penicillin levels up to twenty-four hours after ingestion by human subjects of a single dose of penicillin gel or of crystalline sodium penicillin G suspended in Tween 20. Prolongation of serum penicillin levels was also observed following single subcutaneous or intramuscular injections of insolubilized protein penicillin preparations.

J. Lab. & Clin. Med. 34:67-73, 1949.

TROPICAL MEDICINE

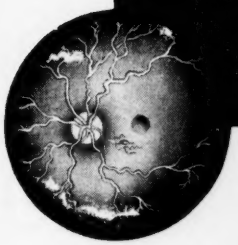
Antiparasitic Agent

A synthetic drug, hetrazan, will clear microfilariae from the blood stream of infected persons and may eradicate the parasitic infection before symptoms of elephantiasis develop. Dr. José Oliver-González and associates of the School of Tropical Medicine, San Juan, Puerto Rico, treated 23 patients with the drug, known chemically as 1-diethylcarbamyl-4-methylpiperazine hydrochloride. In every case microfilariae rapidly disappeared from the blood stream and in 4 cases the adult worm died.

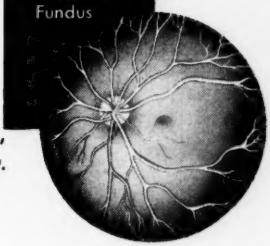
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Ocular Fundus in Degenerative Vascular Disease—Hypertension, Diabetes, Arteriosclerosis —note tortuous blood vessels, areas of exudation, hemorrhagic areas.



Normal Ocular Fundus



schenley laboratories, inc.,
350 fifth ave., new york 1, n. y.

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Fifteen months after treatment 13 patients were still free of parasites. Larger amounts of the drug probably would have eradicated the few that remained in the other 10. Hetrazan has little or no toxicity.

J.A.M.A. 139:308-309, 1949.

HEART SURGERY

Aortic Grafts

Surgical treatment for coarctation of the aorta would be more generally satisfactory if removal of an entire constricted area were always possible. Often insufficient amount of narrowed aorta is excised because of the necessity of joining the severed ends of the vessel. This consideration would be eliminated if a graft or transplant could be used to bridge the gap. Dr. Robert E. Gross of Harvard University, Boston, reports successful use of such a graft. A section of aorta removed from another person and preserved for thirty days was sutured into place to fill a gap nearly 2 in. long. The patient was in excellent health a month after operation. Since the aorta is the only vessel in the body large enough to supply a segment for filling in an aortic gap, the graft must come from some person who has died in an accident or from a nonseptic disease. Experimental work indicates that if arteries are obtained within four or five hours after death, grafts can be preserved for thirty-five to forty days and still be viable when implanted.

J.A.M.A. 139:285-292, 1949.

EXPERIMENTAL SURGERY

Removal of Auricular Appendage in the Dog

Logical approach to the cardiac chambers is through the auricular appendage. To determine the effect of loss of the appendage, Dr. Walter J. Burdette of Louisiana State University, New Orleans, devised an operation to remove the appendage in dogs. The chest is entered through the third or fourth intercostal space. The approach to the pericardium on the right, anterior to the phrenic nerve, is most effective, but a left incision posterior to the nerve gives better exposure. The only difficulty is occasional arrhythmia upon manipulation. Recovery of the animals was prompt. Excision of both appendages produced no signs of failure, although the dogs were observed for a year after operation.



Bull. Am. Coll. Surgeons 34:26, 1949.

CHECK LIST

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Phospho-Soda (FLEET) — TYPE OF ACTION

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SIDE EFFECTS

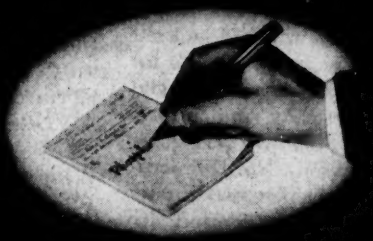
- ✓ Free from Mucosal Irritation
- ✓ Absence of Constipation Rebound
- ✓ No Development of Tolerance
- ✓ Safe from Excessive Dehydration
- ✓ No Disturbance of Absorption of Nutritive Elements
- ✓ Causes no Pelvic Congestion
- ✓ No Patient Discomfort
- ✓ Nonhabituating
- ✓ Free from Cumulative Effects

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ADMINISTRATION

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- ✓ Uniform Potency
- ✓ Pleasant Taste

Phospho Soda Fleet is a solution containing in each 100 cc. sodium biphosphate 48 Gm. anhydrous sodium phosphate 18 Gm.



Judicious Laxation

...through freedom from undesirable side effects

The clinical preference for Phospho-Soda (Fleet) stems in large part from its freedom from undesirable side effects. This desideratum, together with its controlled action and ease of administration, assure safe, effective anticostive therapy from every prescription of this "tried and true" laxative agent. Clinical samples on request.

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PHOSPHO-SODA
(FLEET)

ACCEPTED FOR ADVERTISING BY THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

PHYSICAL THERAPY

Electrical Stimulation of Paralyzed Muscles

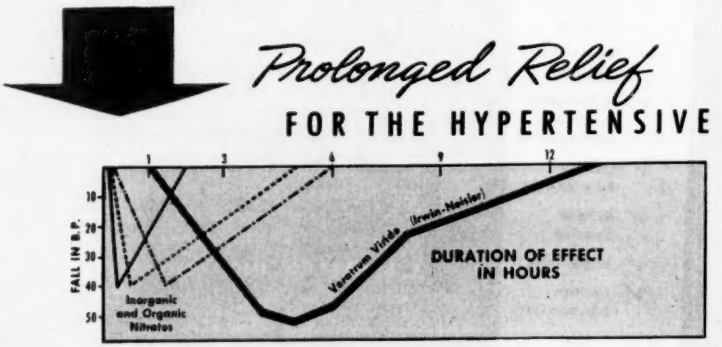
Atrophy of muscles from anterior poliomyelitis may be retarded or even prevented by electrical stimulation of the paralyzed limb. At the Chicago Municipal Contagious Hospital 7 patients in the early stage of anterior poliomyelitis and 13 who had had sequelae of the disease for six months to six years were given vigorous muscle contractions electrically under the supervision of Dr. Stafford L. Osborne and associates from Northwestern University, the University of Illinois, and the University of Wisconsin. In both early and late groups muscle bulk was favorably affected. When treatment was started early the size of the muscles was maintained. Electromyographic evidence in the late cases suggests that electrical stimulation may be of value in helping to restore innervation patterns of the involved muscles. A variable frequency-wave generator was used which supplied a pure sinusoidal current which could be varied at will from two to six thousand cycles per minute. Children from two to sixteen years of age tolerated the current well.

Surg., Gynec. & Obst. 88:243-253, 1949.

TREATMENT

Anterior Poliomyelitis

Administration of priscol hydrochloride seems to alleviate pain and



Veratrite affects a marked relief of headache, palpitation and dizziness in hypertensive subjects, together with a feeling of well-being in the majority of cases of less-than-severe degree.

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Literature – samples on request.

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IRWIN, NEISLER & COMPANY DECATUR, ILLINOIS

spasm of acute anterior poliomyelitis. Dr. Emil Smith and associates of Kingston Avenue Hospital for Communicable Diseases, Brooklyn, report that symptoms were relieved in each of 73 cases treated with priscol. Adolescents and adults receive 50 mg. intravenously every four hours for forty-eight hours and then are treated orally on a similar dosage schedule. For children over five years of age dosage is reduced to 25 mg. For young children treatment is oral with the initial dose being 10 mg. of elixir of priscol. Each succeeding dose is increased by 10 mg. until flushing or goose flesh is observed. Procaine hydrochloride and diethylaminoethanol hydrochloride also appeared to be effective sympatholytic agents.

New York State J. Med. 48:2608-2611, 1948.

AWARDS

Women Doctors Honored

Elizabeth Blackwell Awards, commemorating the one hundredth anniversary of the graduation from medical college of America's first woman doctor, have been presented to 17 distinguished women doctors. At the New York Infirmary, founded by Dr. Blackwell in 1853, citations were made to Drs. Lauretta Bender, Bellevue Hospital; Connie Meyers Guion and May Wilson, New York Hospital; and Anna Hubert and Ada Chree Reid, New York Infirmary.

Dr. Blackwell's alma mater, Hobart College, which admitted her after twenty-eight other institutions had refused to enroll a woman medical student, honored the following physi-

A Marked Increase in Vital Capacity

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cians: Drs. Gerty T. Cori, Webster Groves, Mo.; Margaret D. Craighill, Topeka, Kan.; Martha May Eliot, Washington, D.C.; Therese Bertrand Fontaine, Paris; Alice Hamilton, Hadlyme, Conn.; Elise S. L'Esperance, New York City; Helen M. M. Mackay, London; Helen MacMurchy, Toronto; Helen V. McLean, Chicago; Florence R. Sabin, Denver; Helen B. Taussig, Baltimore; and Priscilla White, Boston.

RADIOISOTOPES

Treatment with Co^{60}

When large bone lesions are to be treated by radiotherapy the homogeneous high energy photons from the radioisotope Cobalt^{60} may be more useful than the heterogeneous gamma rays emitted by radium. Other advantages of Co^{60} over radium are listed by Dr. William G. Myers of Ohio State University, Columbus, as:

► No gaseous radioactive daughters and hence no leakage.

► Applicators rarely break, but if one does, any soluble salt of radiocobalt would be quickly eliminated in the urine.

► Cobalt alloys can be easily machined to any desired shape before irradiation.

► If preparation of applicators incorporating a permanently attached electroplated nickel absorber for soft radiocobalt beta particles becomes feasible, the applicators could be

In Coal Tar Therapy

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"—the advantage of the diminution of the black color is obvious"*

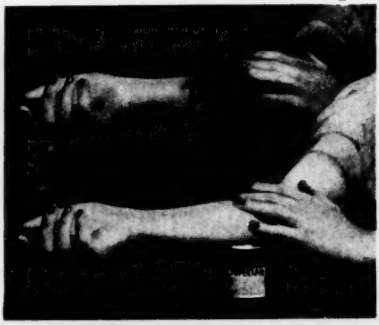
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WHITE, NON-STAINING OINTMENT

Has Other Advantages:

An authoritative work on skin diseases says of SUPERTAH: "It has proven as valuable as the black coal tar preparation . . . it does not stain the skin or clothing, nor does it burn or irritate the skin.

*Swartz & Reilly, *"Diagnosis and Treatment of Skin Diseases,"* p. 66.



It can remain on the skin indefinitely without fear of dermatitis."*

SUPERTAH (Nason's) is a white creamy ointment, packaged in original 2-oz. jars, 5% & 10% strengths. Distributed ethically.

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easily bent to fit lesions of different shapes.

Chief disadvantage is the relatively short half-life of radiocobalt. Applicators must be handled with care. The shielding problem so far as gamma radiation is concerned is essentially the same as that encountered with radium.

Am. J. Roentgenol. 60:816-823, 1948.

NEUROPSYCHIATRY

Prophylactic Electroshock

When recurrences of mental illness cannot be prevented by psychotherapy and related measures, periodic induction of convulsions by electricity may keep a patient well. Prophylactic electroshock at approximately monthly intervals will break up and dissipate accumulating tensions before recurrence of mental disease is detectable, assert Drs. J. J. Geoghegan of Guelph, Ont., and G. H. Stevenson of London, Ont. Some patients, however, prefer to run the risk of future attacks rather than submit to a long series of monthly shocks. Other disadvantages are the risk involved, the expense of treatment, and the time lost from work. In no case should convulsions be induced except for sound medical reasons.

Am. J. Psychiat. 105:494-496, 1949.

Will the Geiger Counter become as much a part of the physician's equipment as the stethoscope?
See "Measurement of Radioactivity"
MODERN MEDICINE *April 1*

New Office Model

ADC Audiometer



The new office model ADC Audiometer incorporates many features previously unavailable in this size at this low cost. It is versatile, easy to operate, accurate and compact. Check these features, and see for yourself:

- **Double air receivers** permit instant shifting of test-tone from ear to ear. Improved masking device isolates one ear simply by turning a switch.
- **Fast, noiseless tone interrupter** permits accurate determination of hearing threshold.
- **Tones produced on all new frequencies** proposed by AMA Council on Physical Medicine.
- **Automatic voltage regulator** compensates for line variations over the range of 100 to 130 v.
- **Weighs only 18 lbs.**; has rear storage compartment for accessories; blond or walnut finish; dust cover provided.

OPTIONAL

Accessory Turntable—can be attached for calibrated speech loss measurements with special word test records.

Group Testing Equipment—for pure-tone examinations of large groups at one time.

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From where I sit *by* Joe Marsh



Yes, Sir, Insomnia's Contagious!

Bud Swanson had trouble sleeping nights last Summer. Tried to get over it by turning up the radio full blast and started an epidemic of insomnia all down the block!

Folks finally dropped a hint to Bud that he close the windows or turn the radio a little lower. Bud did—and that was the quickest cure for *other* folks' insomnia I've ever heard of!

Not that any of us object to the radio, or swing bands, or anything else that helps another person relax of an evening. (Myself, I like a glass of beer with a bit of cheese before I go to bed. I can't speak for *you.*)

From where I sit, good neighborliness means nothing more than simply respecting the other person's tastes and rights — without forcing your own tastes or opinions down his throat. And that goes for Bud's radio, my glass of beer, or whatever temperate pleasure *you* happen to enjoy.

Joe Marsh

Copyright, 1948, United States Brewers Foundation

DERMATOLOGY

Treatment for Psoriasis

Although still in the experimental stage, undecylenic acid given by mouth may bring relief to patients with psoriasis and neurodermatitis. Itching was relieved and psoriatic lesions disappeared in each of 17 cases of psoriasis and 8 cases of neurodermatitis, reports Dr. Henry Harris Perlman of Philadelphia. Undecylenic acid is given three times a day. The initial total daily dose of 7.5 gm. is gradually increased to 10 or 15 gm. without harmful effect. However, the patient should be closely observed for untoward reactions and frequent urinalyses and blood counts done. A bitter aftertaste and belching are common. Nausea and vomiting may be produced. Diarrhea sometimes occurs but usually does not necessitate interruption of medication.

J.A.M.A. 139:444-447, 1949.



BIOCHEMISTRY

New Vitamin Isolated

A crystalline compound, designated vitamin B_{14}, has been isolated from urine. The substance activates cell proliferation when added to bone marrow cultures and accelerates hemopoiesis in vivo. Drs. Earl R. Norris and John J. Majnarich of the University of Washington, Seattle, report that a single injection of 0.01γ of vitamin B_{14} is as effective as 1 mg. of xanthopterin for alleviating the anemia and leukopenia induced in rats by sulfathiazole. The rate of cell proliferation from xanthopterin or from folic acid is increased when either substance is incubated under toluene at 37° C. with an extract of the gastric mucosa of rats. The activity of vitamin B_{14} is not altered by such incubation, indicating that the new vitamin is not identical with either xanthopterin or folic acid.

Science 109:32-35, 1949.

EVENTS

Health Service Positions

Competitive examinations will be held May 3-5 for appointments as Assistant Surgeon and Senior Assistant Surgeon in the U.S. Public Health Service. Entrance pay with and without dependents is, respectively, $5,011 and $5,689. Appointments are permanent and provide for regular promotions up to and including the grade of Senior Surgeon and for selection for promotion to the grade of Medical Director at $9,751 a year. An applicant must be a citizen of the United States and a graduate from a recognized medical school. Information and application forms may be obtained from the Surgeon General, United States Public Health Service. Applications must be completed by April 4.

APPETIZING APPETIZER

Nutritional adequacy is an essential for normal convalescence—in geriatrics—for growing children—during pregnancy and lactation.

To stimulate the appetite and gastric secretion, thousands of physicians have employed

VALENTINE'S

MEAT EXTRACT

the internationally-known liquid Meat Extract. Professional literature gladly supplied on request.

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ARTHRITIS

CHRONIC RHEUMATISM

Lyxanthine

Astier

Sodium iodopropenol sulfonate, lysidine bitartrate, calcium gluconate

beneficially affects physiological disturbances, frequently providing symptomatic and objective relief...

Tarsy, J. M.: M. Times 73:101 (April) 1945.

Pleasant tasting effervescent granules, in bottles of 60 grams

For 10-DAY SAMPLE write Dept. L22

GALLIA LABORATORIES, Inc.

256 West 31st St., New York 1, N.Y.

PHARMACOLOGY

New Nicotinolytic Agents

Toxic actions of nicotine may be suppressed by parpanit or diparcol. Diparcol is N-diethyl-amino-ethyl phenothiazine; parpanit, the diethyl-amino-ethyl ester of phenyl-cyclopentane carbonic acid. Both are synapticolytic, parasympatholytic, and anticonvulsant agents as well as powerful nicotinolytic substances, declare Drs. C. Heymans of the University of Ghent, Belgium, and J. J. Estable of the University of Montevideo, Uruguay. Dogs given intravenous injections of parpanit or diparcol are completely protected against lethal doses of nicotine. These two new synthetics will also give protection against high doses of the following: acetylcholine, pilocarpine, diisopropyl fluorophosphate (DFP), strychnine, and metrazol.

Science 109:122, 1949.

EVENTS

Vienna Reopens Facilities for Postgraduate Work

For the first time since World War II, the University of Vienna is opening its postgraduate medical school to foreign physicians and surgeons. Clinical facilities for postgraduate study at Vienna were unsurpassed when hostilities forced suspension of this activity of the university. Detailed information may be obtained from Austrian State Tourist Bureau, 48 East 48th Street, New York City 17.

for RELIEF of constipation without catharsis

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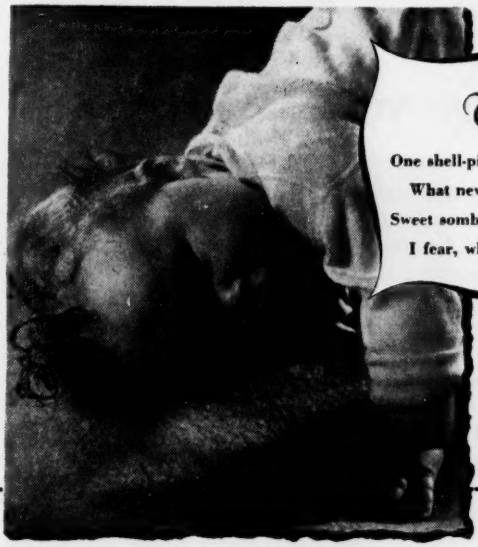
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L. acidophilus in refined mineral oil jelly, chocolate flavored—restores normal intestinal flora and normal colonic function without griping, flatulence, diarrheic movements—gently lubricates without leakage. Jars containing 6 oz.

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THE ARLINGTON CHEMICAL COMPANY

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One shell-pink ear pressed to the ground—
What new distraction have you found?
Sweet somber-eyes, the world's a tangle,
I fear, when viewed from *any* angle . . .

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First, vegetables for Heinz Baby Foods are grown where the fertile soil produces the most desirable crops. *Second,* fine, fresh flavors and colors are preserved by processing fruits and vegetables scientifically. *Third,* vitamins and minerals are retained in high degree by these modern cooking and packing methods. *Fourth,* constant checking and testing by the expert food technicians in Heinz Quality Control Department assure uniform quality of all Heinz Baby Foods.

Heinz Strained Squash has a bright golden color, smooth texture and mild, sweet flavor that are naturally pleasing to babies. For Heinz uses only select squashes harvested at their prime—carefully cooks and packs them according to the most modern methods available to the food industry.

You doctors can confidently recommend Heinz Strained Squash—and the other high-quality, fine-tasting Heinz Baby Foods—for the infants in your care! Heinz offers a complete, well-balanced menu for babies.

No wonder so many doctors wholeheartedly recommend

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STRAINED SQUASH
57 VARIETIES 57
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80-YEAR QUALITY REPUTATION BEHIND HEINZ BABY FOODS

Washington Letter

(Continued from page 48)

intelligence to conquer other things, we will conquer this as well.

Challenge to the AMA

Rep. Andrew Biemiller, Democrat from Milwaukee, is active in social legislation. Defeated in 1946, he's back for this session. At a meeting of a national organization in Washington, he called upon the *Journal of the American Medical Association* to open up its columns to AMA members who favor a compulsory health insurance program. Biemiller admitted he didn't expect to get results right away, but said "We're going to keep on preaching this until we do get some results."

No Compromise on Compulsion

The Democratic Eighty-first Congress is two months old, but there are no surprises on the national health insurance program. Sponsors of a payroll deduction health plan aren't offering to compromise. The Senate's welfare committee will almost certainly report out a national health bill embodying payroll deductions and all the other controversial features of the old Wagner-Murray-Dingell bill. Senate approval, however, is doubtful.

A number of senators are expressing themselves privately the way Estes Kefauver of Tennessee expressed himself publicly; they are willing to vote substantial sums for medicine, but they're not willing at this stage to vote for a compulsory health plan.



How mild can a cigarette be?



In a recent coast-to-coast test, hundreds of men and women smoked Camels—and only Camels—for 30 consecutive days. These people smoked on the average of one to two packages of Camels a day during the entire test period. Each week, throat specialists examined these Camel smokers. A total of 2,470 careful examinations were made by these doctors. After studying the results of the weekly examinations, these throat specialists reported:

"NOT ONE SINGLE CASE OF THROAT IRRITATION DUE TO SMOKING CAMELS!"

Money-Back Guarantee!

Test Camel mildness for yourself in your own "T-Zone." T for taste, T for throat. If, at any time, you are not convinced that Camels are the mildest cigarette you've ever smoked, return the package with the unused Camels and we will refund its full purchase price, plus postage. *(Signed)* R. J. Reynolds Tobacco Company, Winston-Salem, N. C.



According to a Nationwide survey:

MORE DOCTORS SMOKE CAMELS

than any other cigarette



When three leading independent research organizations asked 113,597 doctors what cigarette they smoked, the brand named most was Camel!

Action will be slow in the House. The House committee chairman, John Lesinski of Michigan, appears in no hurry to get out the health bill.

When the bill does come up for vote it will not be watered down. Proponents argue that if the compulsion feature is dropped out, the bill would be no different from a dozen others.

"We want to fight it out on compulsion," said the Congressman. "If we lose, at least we'll have a record vote in the Senate. We'll know how and where to operate next session."

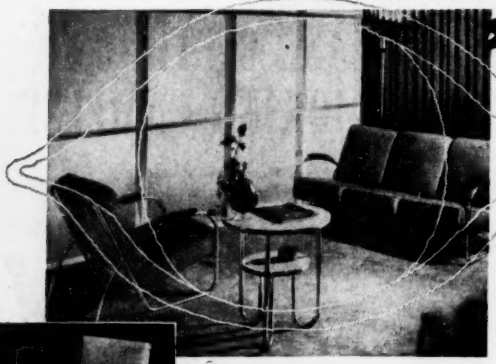
The administration is hopeful of solid progress on other health legislation: national science foundation, school health, hospitals, and grants to the National Institutes of Health.

Incidentally, some patent attorneys are said to be stirring up opposition to the science foundation.

Doctors in Manpower Plan

The budget cut has slowed up military services expansion and delayed enactment of a doctor draft. But an if-and-when manpower plan is on paper, ready for use, which would allocate medical services in a national emergency. Under it the physician would have comparative freedom of practice but he wouldn't be a free agent. Release of part of this program will be one of the early official tasks of former senator Mon C. Walgren who now heads the National Security Resources Board.

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L. A. Formula is indicated in the safe and effective prevention and treatment of chronic constipation. It supplies bulk and lubrication to the intestinal contents by absorbing water and produces **normal** peristalsis. L. A. Formula is easy-to-take and pleasant-to-take and furthermore, it's economical for those who feel that they "must take something every day." Prescribe it in the next case of chronic constipation. Send for a sample now.

Contains Plantago Ovata Concentrate with 50% dextrose as a dispersing agent.



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*THE ORIGINAL PLANTAGO OVATA CONCENTRATE

Tuberculosis among Mental Defectives

The United States Public Health Service has just released a report on a tuberculosis survey of seven California mental institutions and two hospitals for mental defectives. This covers only one state, but P.H.S. says it is typical. Although the cases covered make up only 0.3% of the population of the state, they contributed 4.4% of the deaths from tuberculosis in the years 1944-1945.

Rush to Improve Hospital Laws

A check on states qualifying under the federal hospital assistance act shows that a legislative miracle has been accomplished in a little more than two years. At the time the act was passed in 1946, only eleven states and territories had supervisory legislation that would qualify them for help. A year and a half later all but Nevada and the Virgin Islands had qualified.

Trouble in the FSA

Oscar Ewing, Federal Security Administrator, has come out in the open and told Congress about some of the bickerings within the FSA. Ewing said that some of his assistants were ignoring his instructions and going to congressmen to appeal for special projects, and that he found he didn't have the authority to remove or restrict these persons.



Almay Announces

A NEW INDIVIDUALIZED TREATMENT FOR ACNE AND SEBORRHEA

For severe cases: **Almay *Lotion***
Resorcin and Sulfur Compound—Blonde and Brunette—contains 4% resorcin, 8% sulfur.

For mild or moderate cases: **Almay *Lotion***
Resorcin and Sulfur Compound *Modified*—Blonde and Brunette—contains 2% resorcin, 4% sulfur.
Almay Resorcin and Sulfur Compound *Ointment*—Blonde and Brunette—contains 2% resorcin, 4% sulfur.

ALMAY, INC., 56 COOPER SQUARE, NEW YORK 3, N. Y.

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Almay **RESORCIN AND SULFUR COMPOUND LOTION AND OINTMENT**



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Tyree's Antiseptic Powder offers the busy physician a *balanced* vaginal douche . . .

BALANCED Psychologically . . . by imparting immediately a sense of cool, clean, gratifying comfort, Tyree's restores the woman patient's subjective balance and makes her amenable to further curative treatment.

BALANCED Physiologically . . . by correcting hypo-acidity present in the vaginal pathology with Tyree's, it is possible to approximate the normal vaginal pH of 4.0—a condition very hostile to the growth of vaginal infections.

BALANCED Therapeutically . . . finally, Tyree's value as a vaginal douche is positive, because it balances *effectiveness* with *safety*, avoids complications caused by caustic, irritating douching, while it acts as an effective treatment in vaginal infection. Try Tyree's the next time you prescribe a vaginal douche. Write for literature and professional samples.

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Manufacturers of **CYSTODYNE,** Tyree,
for the treatment of genito-urinary infections

Current Books & Pamphlets

This catalogue is compiled from all available sources, American and foreign, to insure a complete listing of the month's releases.

Medicine

DISEASES OF THE ADRENALS *by* Louis J. Soffer. 2d ed. 320 pp., ill. Lea & Febiger. Philadelphia. $6.50

SYMPOSIA ON NUTRITION, VOL. I: NUTRITIONAL ANEMIA *edited by* Arthur Lejwa. 194 pp. The Robert Gould Research Foundation, Cincinnati. Apply

OVERWEIGHT IS CURABLE *by* Wilfred Dorfman *and* Doris Johnson. 160 pp. The Macmillan Co., New York City. $2.75

LEHRBUCH DER SPIROMETRISCHEN ANALYTIK UND DIAGNOSTIK *by* R. Exner. 308 pp. Verlag Wilhelm Maudrich, Vienna. 80 Sch.

EDINBURGH POSTGRADUATE LECTURES IN MEDICINE, VOL. 4, 1948 *edited by* the Honyman Gillespie Committee. 582 pp., ill. Oliver and Boyd, London. 18*s*.

Surgical Pathology

SURGICAL PATHOLOGY *by* Peter A. Herbut. 710 pp., ill. Henry Kimpton, London. 60*s*.

NOUVEAU PRÉCIS DE PATHOLOGIE CHIRURGICALE *edited by* J. Patel et al. VOL. I. PATHOLOGIE GENÉRAL. 687 pp., ill. 1500 fr.; VOL. II. AFFECTIONS DES MEMBRES ET DES CEINTURES. 620 pp., ill. 1300 fr. Masson & Co., Paris.



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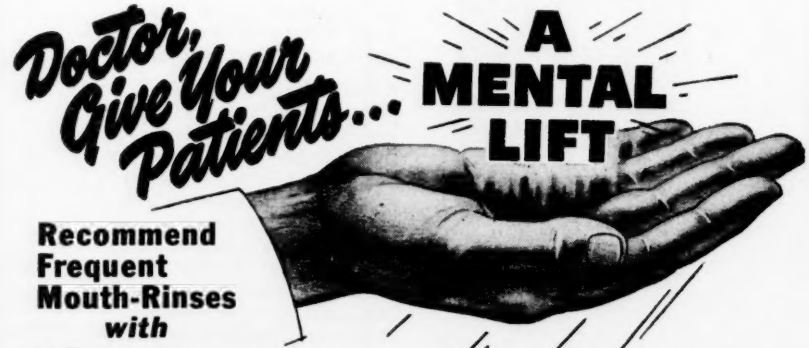
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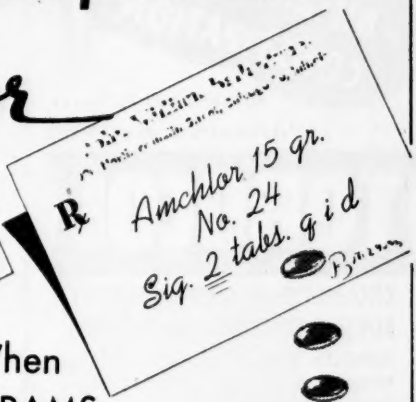
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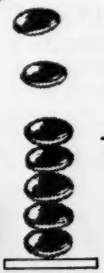


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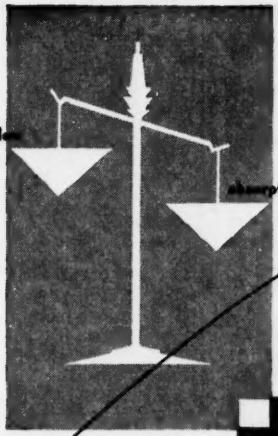
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"I don't like to mention it," said the doctor, "but that check you gave me last week came back."

"Well, that sure is funny, doc," replied the patient, "so did my lumbago!"—C.O.

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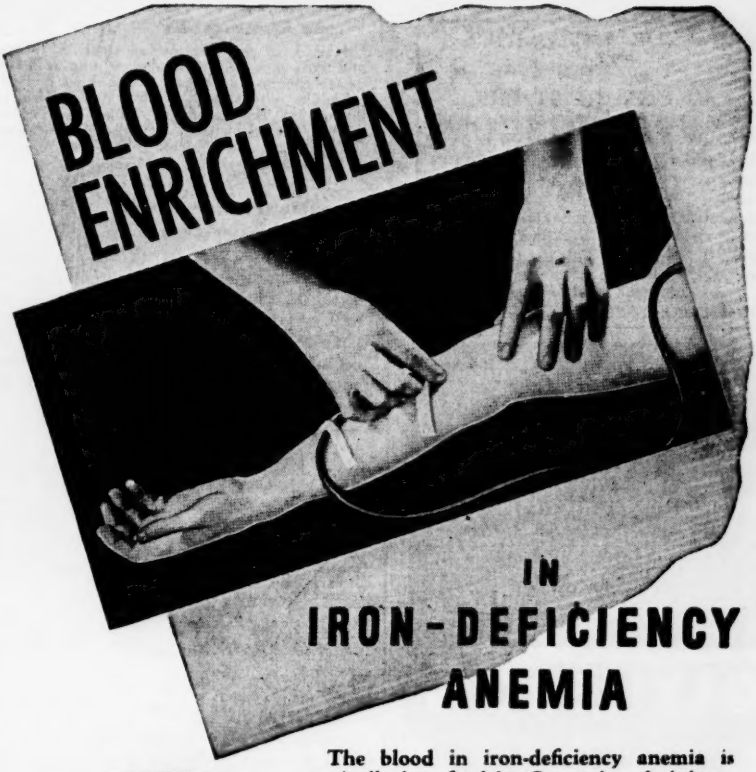
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"Neither," he replied. "She just went in to have a baby."—L.T.T.

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A young woman inquired about a friend in the hospital. I told her that the mother and baby girl were both doing very well.

Flabbergasted, the inquirer exclaimed, "My dear you are thinking about some other patient, Miss Arbuthnot had an appendectomy."

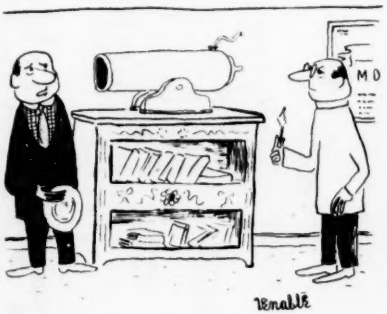
"Well," I retorted, "you may call it a removed appendix if you like, but here we call it a lovely baby girl."—L.T.L.

"Does your girl smoke?" asked the first interne. "Well, not quite," answered the second.

The Right Word

"I don't know what to do," said a distraught mother. "Mary is so jumpy. Why, when she's frightened she falls into the arms of the nearest man. Nothing I tell her has the slightest effect. What would you say, doctor?"

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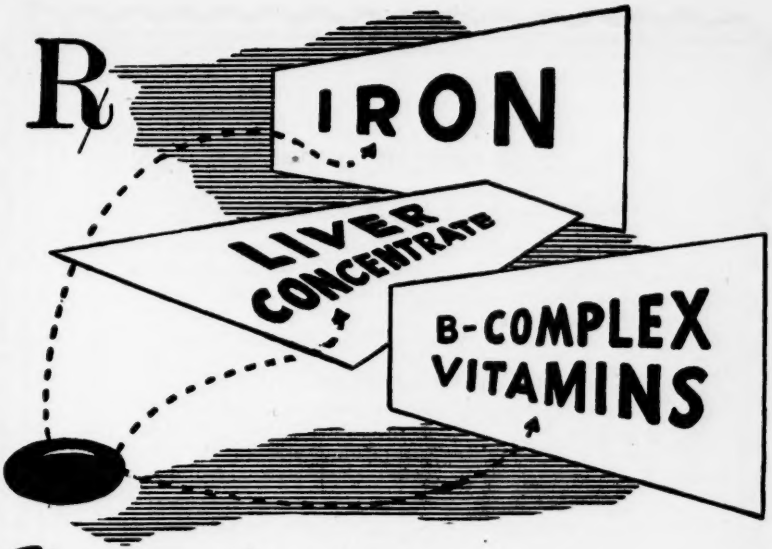
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Hematovals "Ulmer"

(Formerly Hematinic Ovals)

FOR HYPOCHROMIC ANEMIA

Patients often reach a certain point on the ordinary type of hematinic preparation and then fail to make any further progress. When HEMATOVALS "Ulmer" are prescribed, however, even the most difficult cases respond more rapidly and completely. This effective, well-balanced combination assures a quicker, more complete response.

Two HEMATOVALS "Ulmer" taken at mealtimes three times per day supply sufficient Iron, Liver Concentrate (Secondary Fraction) and the approximate daily allowances of all the B-Complex Vitamins so balanced that they completely remove the possibility of error. Highly effective, easily administered, well tolerated and economical, they contain a high potency B-Complex which helps to quickly overcome the anorexia so frequently associated with this type of anemia.

FORMULA Ferrous Sulfate, Dried (Eq. to 3.6 grs. USP) 2.5 Grs., Liver Concentrate (High Potency) 2.5 Grs., Vitamin B_1 (Thiamine Hcl. 111 USP Units) 0.333 Mg., Vitamin B_2 (Riboflavin) 0.333 Mg., Vitamin B_6 (Pyridoxine Hcl.) 0.050 Mg., Calcium Pantothenate 0.250 Mg., Niacin Amide 3.300 Mg.

ULMER PHARMACAL COMPANY

MINNEAPOLIS Manufacturing Chemists MINNESOTA



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The experience of competent clinicians clearly establishes that optimum protection is afforded the patient by the combined use of an occlusive diaphragm and a spermatocidal jelly.
By specifying the Ramses

PRESCRIPTION PACKET NO. 501

the physician provides optimum protection in one convenient package.

COMPLETE LITERATURE ON REQUEST

"RAMSES"* Prescription Packet No. 501 . . . Contains a "RAMSES" Flexible Cushioned Diaphragm of the prescribed size, a "RAMSES" Diaphragm Introducer of corresponding size, and a tube of "RAMSES" Vaginal Jelly.

"RAMSES" Vaginal Jelly is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. The "RAMSES" Diaphragm and Diaphragm Introducer are accepted by the Council on Physical Medicine of the American Medical Association.

gynecological division
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At least 5 cc. of CORAMINE

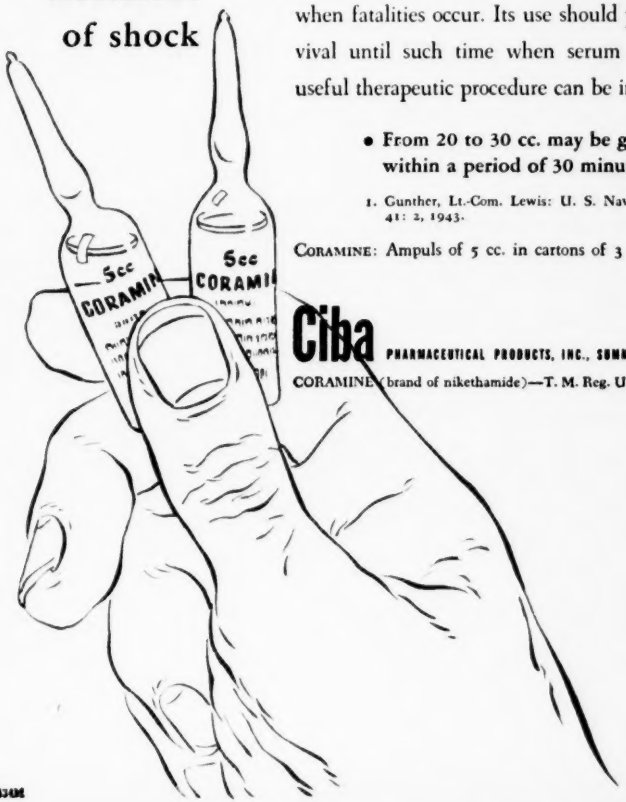
for emergency treatment of shock

"The intravenous use of Coramine in adequate doses from 5 to 10 cc. is a valuable adjunct in the treatment of the immediate period of shock. The clinical evidence of peripheral collapse rapidly regresses for a period of an hour or more. The effect can be repeated by a second intravenous administration. . . . Peripheral circulatory support is obtained during the immediate period when fatalities occur. Its use should permit survival until such time when serum and other useful therapeutic procedure can be instituted."[1]

- **From 20 to 30 cc. may be given safely within a period of 30 minutes.**

1. Gunther, Lt.-Com. Lewis: U. S. Naval Med. Bull., 41: 2, 1943.

CORAMINE: Ampuls of 5 cc. in cartons of 3 and 12.



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2/1434M